Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts to Air Quality FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Air	Air quality would continue to be protected although short-term impacts could occur from ongoing fire events, prescribed fire activities, slash burning, or dust from travel on unpaved roads, and dust and exhaust from construction or development activities. Air quality standards would be met. It is unlikely that visibility would be adversely affected at Class 1 areas, by prescribed burning, due to the distances, prevailing wind direction, as well as relatively low burn rates and acreages of prescribed burns.	Air quality would continue to be protected similar to Alternative A although short-term impacts from prescribed burning could be greater due to increase in potential acreage burned. Air quality standards would be met. It is unlikely that visibility would be adversely affected at Class 1 areas, by prescribed burning, due to the distances, prevailing wind direction, as well as relatively low burn rates and acreages of prescribed burns.	Air quality would continue to be protected similar to Alternative A although short-term impacts from prescribed burning would be less than in all other alternatives due to decrease in potential acreage burned. Air quality standards would be met. It is unlikely that visibility would be adversely affected at Class 1 areas, by prescribed burning, due to the distances, prevailing wind direction, as well as relatively low burn rates and acreages of prescribed burns.	
Impacts from Air Quality Standards	The rangeland health air quality standard would apply to all resource uses and activities. Rangeland health air standards are based primarily on State standards. The use of the air quality standard for rangeland health provides a consistent, uniform standard for air quality measures including criteria for individual pollutants. Federal air quality standards would be met, as the State of South Dakota normally adopts the federal air quality standards.			
Impacts from Climate	Potential efforts to address climate change could have a minor positive effect on improving air quality in the planning area.			
Impacts from Soil Resources	Some fugitive dust is naturally produced. Short-term areas of disturbance would slightly increase fugitive dust in some cases while reclamation efforts are taking effect.			
Impacts from Fire Management and Ecology	This alternative would result in the least amount of smoke from prescribed (Rx) fires. The smoke would be minor,	This alternative would result in the greatest amount of smoke from Rx fires. The smoke would be minor,	This Alternative would result in more smoke than Alternative A, but less than B from Rx fires. The smoke	This alternative would result in the greatest amount of smoke from Rx fires. The smoke would be minor,

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	localized, and would last for a few days each year. Approximately 213 acres would be burned in prescribed fires each year.	localized, and would last for a few days each year. Approximately 1,000 acres would be burned in prescribed fires each year.	would be minor, localized, and would last for a few days each year. Approximately 500 acres would be burned in prescribed fires each year.	localized, and would last for a few days each year. Approximately 1,000 acres would be burned in prescribed fires each year.
Resource Uses				
Energy and Minerals				
Impacts from Leasable Minerals	Low impacts from dust that is generated from travel on gravel or dirt roads. If drilling reaches the upper level of the reasonably foreseeable development scenario, the potential to exceed air quality standard for dust, sulfur dioxide, nitrogen oxides, ozone, and nitrogen dioxide would tend to be moderately increased and would need to be evaluated to find whether measures would need to be taken by the state to ensure that standards are met.			
Impacts from Salable Minerals	Low impacts from dust from gravel crushing operations over the short term.			
Impacts from Locatable Minerals	Low impacts from dust that is generated from travel on gravel or dirt roads. Over the short term, areas undergoing strip mining and the beginning phases of reclamation would contribute moderate amounts of dust for very brief periods.			
Impacts from Livestock Grazing	Fugitive dust levels would remain similar to current low levels.	Fugitive dust levels may tend to increase slightly.	Fugitive dust levels would remain similar to current low level.	Same as Alternative B.
Impacts from Recreation/ Visitor Services	Low impacts from dust that is generated from travel on gravel or dirt roads.			
Impacts from Travel Management	Low impacts from dust that is generated from travel on gravel or dirt roads.			
Impacts from Forest and Woodland Products	Negligible impacts.			
Impacts from Transportation Facilities and Access	Low impacts from dust that is generated from travel on gravel or dirt roads.			
Impacts from Renewable Energy	Travel associated with development and maintenance of renewable energy on gravel or dirt roads would result in minor increases in dust.			
Areas of Critical Environmental Concern				
Impacts from Fort Meade ACEC	Low impacts from dust that is generated from travel on gravel or dirt roads.			

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Impacts to Surface Water and Groundwater Resources FROM other resources, resource uses, and special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Water Resources management actions	NSO stipulations for riparian areas, floodplains, wetlands and waterbodies on 13,397 acres of BLM surface, and 63,426 acres of federal minerals would have short- and long-term moderate beneficial impacts to water quality but less area protected than Alternative B, C and D. BMPs and Rangeland Health Standards would benefit water quality by reducing erosion, compaction and maintaining or improving vegetative conditions in these areas.	NSO stipulations would include riparian areas, floodplains, wetlands, and water bodies and areas within 300 feet of these features. The additional buffer would result in 17,090 additional acres of BLM surface estate and 82,743 acres of BLM mineral estate protected. There would be less potential for spills or contamination of water and short and long term beneficial impacts to water quality over a larger area. Overall 30,487 acres of BLM surface estate and 146,169 acres of BLM-administered mineral estate would receive short and long term beneficial impacts to soils. BMPs and Rangeland Health Standards would benefit water quality by reducing erosion, compaction and maintaining or improving vegetative conditions in these areas.		
Impacts from Fisheries habitat management actions including Special Status Species	Direct and indirect impacts to surface water and groundwater would be negligible across all alternatives.			
Impacts from Invasive Species management actions, including Noxious Weeds	Control and removal of noxious weeds would create minor to negligible beneficial short- and long-term effects to surface water and would have no impact on groundwater.			
Impacts from Soil Resource management actions	Table 4-19 displays the acres that would receive long-term disturbance by each alternative. The total number of acres of surface disturbance would vary slightly between alternatives as shown in Tables 4-18 and 4-19. Short-term surface disturbance would be reclaimed fairly quickly resulting in very low acreages of long-term surface disturbance (maximum of 376 acres). This amounts to roughly 0.1% of the decision area. Very few of these acres would be within 1/4 mile of streams due to			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	stipulations and other mitigation measures, therefore providing vegetation buffers between surface disturbance and streams or other riparian areas. A majority of sediment transport would be mitigated through restrictions on surface-disturbing activities near surface water, which would result in no detectable impact to water quality from surface-disturbing activities for all alternatives.			
Impacts from Vegetative Communities management actions	Vegetation treatments and management activities would create minor short-term disturbances and localized detrimental impacts to surface water quality. These activities would also result in minor to moderate beneficial long-term impacts to water quality due to reduced sedimentation resulting from re-establishing adequate ground cover. The types and magnitude of impacts would be similar under all alternatives. Groundwater impacts would be negligible.			
Impacts from Visual Resources management actions	VRM protective considerations would result in varying effects on potential erosion. Negligible numbers of projects would not be completed, reducing potential erosion. Minor negative erosive effects could occasionally occur due to compromises in project location. Groundwater impacts would be negligible.			
Impacts from Wildlife management actions including Special Status Species	Management decisions designed to protect plant and wildlife species designated as threatened or endangered under the ESA, or considered sensitive species by the BLM in the planning area, would generally have beneficial impacts to water resources. Acres of wildlife resource restrictions are presented throughout the alternatives in Table 4-23. Enhancing wildlife habitat generally assists in improving vegetative communities toward PFC. This would result in reduced erosion throughout the planning area and therefore reduced sedimentation to streams. Wildlife management actions to improve wildlife habitat are generally expected to create minor beneficial short- and long-term impacts to water under all alternatives.			
Impacts from Fire Management and Ecology management actions	Alternative A would have an average of 559 acres treated for fuels treatments annually (includes Rx fire and mechanical treatments); therefore having the least amount of short-term adverse impacts on surface water quality from disturbance. Long-term beneficial impacts would be minor. Groundwater impacts would be negligible.	Alternative B would have an average of 1,400 acres treated for fuels treatments annually (includes Rx fire and mechanical treatments); therefore having the greatest amount of adverse short-term impacts on surface water quality from disturbance. Long-term beneficial impacts would be greater than Alternative A. Groundwater impacts would be negligible.	Alternative C would have an average of 850 acres treated for fuels treatments annually (includes Rx fire and mechanical treatments); therefore having more short-term adverse impacts on surface water quality from disturbance than Alternative A and less than Alternative B. Long-term impacts would similar to other alternatives. Groundwater impacts would be negligible.	Same as Alternative B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Resource Uses				
Energy and Minerals				
Impacts from Leasable Minerals management actions	Short- and long-term minor to moderate adverse impacts to ground and surface water. Most acres open to leasing without restrictions as follows: 127,413 surface acres open to leasing without BLM restrictions other than standard terms and conditions; 2,397,213 mineral acres open without BLM restrictions other than standard terms and conditions.	Impacts to ground and surface water would be less than under Alternative A. Intermediate acres open to leasing as follows: 83,625 surface acres open to leasing without BLM restrictions other than standard terms and conditions; 1,730,833 mineral acres open without BLM restrictions other than standard terms and conditions.	The least amount of impacts to ground and surface water would occur under this Alternative. Most restrictive stipulations (highest acres under NSO restriction) and fewest acres open to leasing would occur as follows: 75,174 surface acres open to leasing without BLM restrictions other than standard terms and conditions; 1,673,071 mineral acres open without BLM restrictions other than standard terms and conditions.	Impacts to ground and surface water would be less than under Alternatives A and B but more than Alternative C as fewer acres would be protected under an NSO stipulation. Slightly more acres open to leasing than Alternative C as follows: 76,265 surface acres open to leasing without BLM restrictions other than standard terms and conditions; 1,710,397 mineral acres open without BLM restrictions other than standard terms and conditions.
	Impacts to shallow groundwater could potentially be large in localized areas. Impacts to deep groundwater could potentially be moderate over a longer time frame in larger areas. The effect on aquifers is uncertain due to lack of details on chemicals used and disposition through time.			
Impacts from Salable Minerals management actions	Short- and long-term adverse impacts to surface water and shallow groundwater would be minor to negligible under all alternatives. Impacts to deep groundwater would be negligible.			
Impacts from Locatable Minerals management actions	Short- and long-term adverse impacts to surface water and shallow groundwater would be minor to negligible under all alternatives. Impacts to deep groundwater would be negligible.			
Impacts from Forest and Woodland Products management actions	Short- and long-term adverse impacts to water resources resulting from resource use activities are anticipated to	Short- and long-term adverse impacts to water resources resulting from resource use activities are anticipated to	Short- and long-term adverse impacts to water resources resulting from resource use activities are anticipated to be	Short- and long-term adverse impacts to water resources resulting from resource use activities are anticipated to

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	be minor. Groundwater impacts would be negligible.	be minor to moderate. Groundwater impacts would be negligible.	minor and lower than under other alternatives. Groundwater impacts would be negligible.	be minor. Impacts would be greater than under Alternatives A and C and less than Alternative B. Groundwater impacts would be negligible.
Impacts from Lands and Realty management actions	Impacts would remain negligible as discussed under Impacts Common to All Alternatives in Chapter 4. Right-of-way (ROW) restrictions to other resource uses may provide added protection to water resources by providing an increase to vegetation buffer corridors. A total of 5,522 acres are excluded from ROW development in the Fort Meade ACEC/SRMA (Table 4-24). Groundwater impacts would be negligible.	Impacts would remain negligible as discussed under Impacts Common to All Alternatives in Chapter 4. ROW restrictions to other resource uses may provide added protection to water resources by providing an increase to vegetation buffer corridors. A total of 189,153 acres are avoided from ROW development in Alternative B (Table 4-24). Groundwater impacts would be negligible.	Impacts would remain negligible as discussed under Impacts Common to All Alternatives in Chapter 4. ROW restrictions to other resource uses may provide added protection to water resources by providing an increase to vegetation buffer corridors. A total of 199,420 acres are excluded from ROW development in Alternative C (Table 4-24). Groundwater impacts would be negligible.	Impacts would remain negligible as discussed under Impacts Common to All Alternatives in Chapter 4. ROW restrictions to other resource uses may provide added protection to water resources by providing an increase to vegetation buffer corridors. A total of 5,836 acres are excluded and 191,704 acres avoided from ROW development in Alternative D (Table 4-24). Groundwater impacts would be negligible.
Impacts from Livestock Grazing management actions	Construction of range improvement structures would create minor adverse short-term impacts to surface water quality. Implementation of Rangeland Health Standards would have moderate, beneficial long-term effects on surface water quality. Groundwater impacts would be negligible. Moving 1,400 acres of uplands towards meeting the Standards and improving four miles of stream in FAR towards PFC would reduce sedimentation and improve water quality to a slight degree.			
Impacts from Recreation/ Visitor Services management actions	Recreational gold panning, dispersed and developed camping, and group permits could produce minor, adverse, short-term impacts to surface water resources under all alternatives. Groundwater impacts would be negligible.			
Impacts from Renewable Energy management actions	As shown in Tables 4-18 and 4-19, approximately 924 acres of short-term and 231 acres of long-term surface disturbance are expected to	As shown in Tables 4-18 and 4-19, approximately 768 acres of short-term and 192 acres of long-term surface disturbance are expected to	As shown in Tables 4-18 and 4-19, approximately 588 acres of short-term and 147 acres of long-term surface disturbance are expected to result from	As shown in Tables 4-18 and 4-19, approximately 884 acres of short-term and 221 acres of long-term surface disturbance are expected to

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	result from renewable energy development activities under Alternative A. Impacts to water resources would remain negligible as discussed in Impacts Common to All Alternatives in Chapter 4. Groundwater impacts would be negligible.	result from renewable energy development activities under Alternative B. Impact to water resources would remain negligible as discussed in Impacts Common to All Alternatives in Chapter 4. Groundwater impacts would be negligible.	renewable energy development activities under Alternative C. Impacts to water resources would remain negligible as discussed in Impacts Common to All Alternatives in Chapter 4. Groundwater impacts would be negligible.	result from renewable energy development activities under Alternative D. Impacts to water resources would remain negligible as discussed in Impacts Common to All Alternatives in Chapter 4. Groundwater impacts would be negligible.
Impacts from Travel Management actions	Minor, adverse, short-term impacts to surface water would occur under all alternatives. Groundwater impacts would be negligible.			
Special Designations				
Impacts from Areas of Critical Environmental Concern				
Fort Meade ACEC	Negligible to minor adverse short- and long-term impacts to water with slightly better protection for water in Alternative C. Groundwater impacts would be negligible.			
Management Concerns				
Impacts from Abandoned Mine Lands management actions	AML restoration would create beneficial, minor to moderate short- and long-term impacts to surface and groundwater. Introduction of contaminants to surface waters could occur due to remobilization of contaminated sediments. Impacts resulting from these actions would need to be evaluated on a case-by-case basis.			
Impacts from Hazardous Wastes management actions	Potential impacts to water resources from the inadvertent release of hazardous materials into groundwater at the former Minuteman sites would be greatest under this alternative. Potential short- and long-term adverse impacts to surface and groundwater would be minor.	Surface use restrictions would provide greater protection to water resources than Alternative A. Potential short- and long-term adverse impacts to surface and groundwater would be minor, and less than under Alternative A.	Greater surface use restrictions would provide the most protection to water resources. Potential short- and long-term adverse impacts to surface and groundwater would be minor, and less than under other alternatives.	Same as Alternative B.
Refer to Table 2-1 Summary of Restrictions for acreages of surface use restrictions.				

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts to Soil Resources FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Climate	Soils could begin a decrease in organic matter content due to long-term climate change. The level of change would likely be negligible during the life of the RMP.			
Impacts from Cultural Resources management actions	Excavations would have negligible adverse effects on negligible areas of soil resources. Avoidance decisions, acquisition of significant cultural resource properties, and listing of sites on the National Register of Historic Places would have minor long-term beneficial effects on soil resources.			
Impacts from Invasive Species management actions, including Noxious Weeds	Invasive weed treatments would result in minor short-term adverse and minor long-term beneficial impacts to soil slope stability.			
Impacts from Paleontological Resources management actions	Excavations would have negligible short- and long-term adverse effects on small soil resource areas. Avoidance decisions would have minor long-term beneficial impacts to soils.			
Impacts from Vegetative Communities				
Impacts from Rangeland management actions	Management activities would create minor short-term adverse impacts and moderate long-term beneficial impacts to soils.	This alternative would have greater moderate long-term impacts to soils than Alternative A. Short-term adverse impacts would be the same as other alternatives.	This alternative would create the greatest long-term beneficial impacts to soils. Short-term adverse impacts would be the same as other alternatives.	Same as Alternative B.
Impacts from Riparian and Wetland management actions	NSO stipulations for riparian areas, floodplains, wetlands and waterbodies on 13,397 acres of BLM surface, and 63,426 acres over federal minerals would have short- and long-term moderate beneficial impacts to soils but less area protected than Alternative B,C and D.	NSO stipulations would include riparian areas, floodplains, wetlands, and water bodies and areas within 300 feet of these features. The additional buffer would result in 17,090 additional acres of BLM surface estate and 82,743 acres of BLM mineral estate protected. There would be less potential for spills or contamination of water and short and long term beneficial impacts to soils over a larger area. Overall 30,487 acres of BLM surface estate and 146,169 acres of BLM-administered mineral estate would receive short and long term beneficial impacts to soils. BMPs and Rangeland Health Standards would benefit soils by reducing erosion, compaction and maintaining or improving vegetative conditions in these areas.		

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	BMPs and Rangeland Health Standards would benefit soils by reducing erosion, compaction and maintaining or improving vegetative conditions in these areas.			
Impacts from Visual Resources management actions	VRM protective considerations would have minor beneficial effects on soils.	VRM protective considerations would have slightly greater minor beneficial effects on soils than Alternative A.	VRM protective measures would have the greatest level of minor to moderate beneficial effects on soils.	VRM protective measures would have slightly more minor beneficial effects on soils than Alternative B, but less than Alternative C.
Impacts from Water Resources management actions	NSO stipulations for riparian areas, floodplains, wetlands and waterbodies on 13,397 acres of BLM surface, and 63,426 acres over federal minerals would have short- and long-term moderate beneficial impacts to soils but less area protected than Alternative B,C and D.	NSO stipulations would include riparian areas, floodplains, wetlands, and water bodies and areas within 300 feet of these features. The additional buffer would result in 17,090 additional acres of BLM surface estate and 82,743 acres of BLM mineral estate protected. There would be less potential for spills or contamination of water and short and long term beneficial impacts to soils over a larger area. Overall 30,487 acres of BLM surface estate and 146,169 acres of BLM-administered mineral estate would receive short- and long-term beneficial impacts to soils.		
Impacts from Fire Management and Ecology	Prescribed fire and mechanical treatments would have moderate short-term and minor to negligible long-term adverse effects on soil resources and moderate long-term beneficial effects.	Short-term adverse and long-term beneficial effects would be greater than Alternative A due to more mechanical treatment and prescribed burning. Some negative impacts for a moderate period of time would occur due to soil compaction from heavy equipment.	Short-term adverse and long-term beneficial effects would be less than Alternatives B and D, but greater than Alternative A.	Same as Alternative B.
Impacts from Wildlife management actions	Few protection measures applied for wildlife would	Intermediate acreage under protection measures would	Increased acreage under protection measures would	Intermediate amount of acreage under protection

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
including Special Status Species (Refer to Table 2-1 Summary of Restrictions, for acreages of wildlife and special status species related restrictions.)	result in minor beneficial impacts to soils.	result in more minor beneficial impacts to soils than Alternative A and more impact to soils than Alternatives C and D.	result in moderate to major beneficial impacts to soils. Introduction of prairie dogs and moderate adverse impacts to soils would be greatest under this alternative.	measures would result in more beneficial impacts to soils than Alternatives A and B and less than Alternative C.
Impacts from Fisheries management actions including Special Status Species	Small buffer of NSO around reservoirs with fisheries would create minor beneficial impacts to soils.			
Resource Uses				
Impacts from Energy and Minerals				
Impacts from Leasable Minerals management actions	Moderate short- and long-term adverse effects on small to medium areas of soils. The greatest soil compaction would occur from this alternative. Most acres open to leasing without restrictions as follows: 127,413 surface acres open to leasing without restrictions other than standard terms and conditions; 2,397,213 mineral acres open without restrictions other than standard terms and conditions.	Slightly fewer moderate short- and long-term adverse effects on small to medium areas of soils than Alternative A. Intermediate acres open to leasing as follows: 83,625 surface acres open to leasing without restrictions other than standard terms and conditions; 1,730,833 mineral acres open without restrictions other than standard terms and conditions.	Slightly fewer minor to moderate short- and long-term adverse effects on small to moderate areas of soils than Alternative B. Most restrictive stipulations (highest acres under NSO restriction) and fewest acres open to leasing without restrictions other than standard terms and conditions would occur as follows: 75,174 surface acres open to leasing without restrictions other than standard terms and conditions; 1,673,071 mineral acres open without restrictions other than standard terms and conditions.	Slightly more short- and long-term adverse effects on small to medium areas of soils than Alternative C, but less than Alternatives A and B. Greater protective measures than Alternatives A and B. Slightly more acres open to leasing than Alternative C as follows: 76,265 surface acres open to leasing without restrictions other than standard terms and conditions; 1,710,397 mineral acres open without restrictions other than standard terms and conditions.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Impacts from Salable Minerals management actions	Minor short-term and minor long-term adverse effects on small areas of soils.			
Impacts from Locatable Minerals management actions	Major short-term impacts on moderate areas and major long-term impacts on small areas of soils due to direct impact from mining. Moderate to minor short- and long-term impacts resulting from mining-related activities.			
Impacts from Forest and Woodland Products management actions	Mechanical treatments and burning of thinned forests would cause short-term adverse impacts and long-term beneficial impacts to forest soils. Beneficial long-term impacts would be due to lower risk of severe large-scale wildfires.			
Impacts from Lands and Realty management actions	Small-scale adverse impacts to soils, with slightly less impacts in Alternative C from authorizing less surface-disturbing activity under the lands program.			
Impacts from Livestock Grazing management actions	Range improvements would have minor adverse short-term impacts on soils. Implementation of Rangeland Health Standards would have moderate beneficial long-term effects on soils.	Same as Alternative A.	This alternative would provide the greatest protection of soils and would have fewer adverse short-term impacts from direct disturbance. Long-term impacts would vary depending on type, location of disturbance and improved management of livestock.	Same as Alternative A.
Impacts from Recreation/ Visitor Services	Recreational gold panning, both developed and dispersed recreation, and group permits would cause small localized, and occasionally moderate, adverse short-term impacts to soils.			
Impacts from Renewable Energy management actions (Refer to Table 2-1 Summary of Restrictions, for acreages of restrictions that apply to Renewable Energy [ROWs].)	Few surface use stipulations would create the most acres of surface disturbance and the greatest level of moderate to minor adverse impacts to soils. As shown in Tables 4-18 and 4-19, approximately 924 acres of short-term and 231 acres of long-term surface disturbance are	Intermediate acreage under surface use stipulations would result in fewer minor adverse impacts to soils than Alternative A and more impacts to soils than Alternatives C and D. As shown in Tables 4-18 and 4-19, approximately 768 acres of short-term and 192 acres	Increased acreage under surface use stipulations would result in slightly fewer minor adverse impacts to soils than other Alternatives. As shown in Tables 4-18 and 4-19, approximately 588 acres of short-term and 147 acres of long-term surface disturbance are expected to result from	Intermediate amount of acres under surface use stipulations would result in fewer minor adverse impacts to soils than Alternatives A and B and slightly greater impacts than Alternative C. As shown in Tables 4-18 and 4-19, approximately 884 acres of short-term and 221

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	expected to result from renewable energy development activities under Alternative A.	of long-term surface disturbance are expected to result from renewable energy development activities under Alternative B.	renewable energy development activities under Alternative C.	acres of long-term surface disturbance are expected to result from renewable energy development activities under Alternative D.
Impacts from Travel Management actions	Restriction on off-road motorized travel would protect soils. Adverse short- and long-term impacts to soils would be minor.	Construction of new trails would create moderate short- and long-term adverse impacts to soils, including compaction.	Increased restrictions on off-road motorized travel and road construction would result in the least adverse impacts to soils.	An intermediate level of restrictions on off-road motorized travel would create fewer adverse impacts to soils than under Alternatives A and B, but more than under Alternative C.
	Allowing leaseholders to travel cross country to administer leases would result in minor, long-term impacts to soil resources.			
Special Designations				
Impacts from Areas of Critical Environmental Concern				
Impacts from ACEC designations	Negligible to minor adverse short- and long-term impacts to soils with slightly better protection for soils in Alternative C.			
Management Concerns				
Impacts from Abandoned Mine Lands management actions	Small areas of soils would be restored via the AML program. This moderate beneficial impact would be short- and long-term.			
Impacts to Vegetation - Forests and Woodlands FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Visual Resources management actions	Lack of VRM designation may provide more flexibility in treatments.	The designation and subsequent management of the visual resource class may affect the layout and treatment intensities in forests and woodlands. Impact would be negligible.		
Impacts from Lands with Wilderness Characteristics	None present.			

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Resource Uses				
Impacts from Recreation/Visitor Services management actions	Recreation facility development is not as likely as Alternative B, but may still occur under this alternative.	The designation and subsequent management and development of an Exemption Area SRMA may impact the forest vegetation. Possible development of facilities would require the clearing of trees.	Same as Alternative A.	Same as B
Impacts from Forest and Woodland Products management actions	The ability to sell excess material makes forest and woodland treatments more practical and likely. Since treatments are proposed to work towards healthy and resilient conditions any management action that improves the probability of treatment would benefit the forests and woodlands. The differences in levels of sale quantity between the alternatives are minor.			
Impacts to Rangeland Vegetation FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from restrictions used to protect various resources	Under Alternative A, BLM-administered surface lands would have 6,883 and 15,401 acres Closed and with NSO lease stipulations, respectively (Table 4-25). There would also be 5,522 acres of ROW exclusion areas (Table 4-26). Surface-disturbing activities would have more of an adverse effect on vegetation in Alternative A than Alternatives B, C, and D. Eliminating surface disturbances in these areas or only allowing activities	Under Alternative B, BLM-administered surface land would have 6,570 and 91,058 acres Closed and with NSO lease stipulations for oil and gas production, respectively (Table 4-25). There would not be any acres of ROW exclusion areas (Table 4-26) in Alternative B, although there would be 166,130 acres of ROW avoidance areas. Surface-disturbing activities would have less effect on vegetation than Alternative A and a slightly greater	Under Alternative C, BLM-administered surface lands would have 6,883 and 123,921 acres Closed and with NSO lease stipulations for oil and gas production, respectively (Table 4-25). There would also be 175,158 acres of ROW exclusion areas (Table 4-26). Surface-disturbing activities would have the least effect on vegetation of all the alternatives.	Under Alternative D, BLM-administered surface lands would have 6,883 and 91,505 acres Closed and with NSO lease stipulations for oil and gas production, respectively (Table 4-25). There would be 133,579 acres of ROW exclusion areas and 40,428 acres of ROW avoidance areas (Table 4-26). Surface-disturbing activities would have less of an effect on vegetation than Alternatives A and B and slightly more of an effect than Alternative C.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	that would not degrade vegetative communities or other resources would benefit efforts to achieve or maintain the Standards for Rangeland Health.	effect than Alternative C.		
Impacts from Soil Resources management actions	Approximately 8,575 acres of BLM-administered surface lands would be covered by CSU stipulations in areas with slopes greater than 30% (Table 4-21). This alternative would provide the least protection against excessive soil erosion and degradation as Alternative A only applies to oil and gas activities while the other alternatives apply stipulations to oil and gas, renewable energy, and ROWs resulting in fewer acres of restrictions for Alternative A.	Approximately 53,291 acres of BLM-administered surface would be covered by CSU stipulations for oil and gas production in areas with slopes greater than 25% and where sensitive soils are present. ROW restrictions would include 57,971 acres of avoidance areas for BLM-administered surface (Table 4-21). The stipulations under Alternative B would still provide protection to soil resources, minimizing potential erosion and therefore reducing the number of sites available for noxious weed establishment. This would help maintain a diverse assemblage of native plant communities.	Approximately 53,291 acres of BLM-administered surface would be covered by NSO lease stipulations for oil and gas production in areas with slopes greater than 25% and where sensitive soils are present. ROW restrictions would include 57,971 acres of exclusion areas for BLM-administered surface (Table 4-21). Modifying CSU stipulations, as under Alternative C, to NSO and increasing ROW avoidance areas to exclusion areas would provide a greater level of protection against excessive erosion and sedimentation.	Approximately 52,362 acres of BLM-administered surface would be covered by CSU stipulations for oil and gas production in areas with slopes greater than 25% to 50%, and where sensitive soils are present. Approximately 929 acres would be closed to oil and gas production due to slopes greater than 50%. ROW restrictions would include 57,971 acres of avoidance areas for BLM-administered surface (Table 4-21). The stipulations under Alternative D would provide protection to soil resources (higher than A and B, but less than C); minimizing potential erosion and therefore reducing the number of sites available for noxious weed establishment. This would help maintain a

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
				diverse assemblage of native plant communities.
Impacts from Water Resources management actions	Alternative A would provide NSO lease stipulations to oil and gas activity on 13,397 acres of BLM-administered surface acres (Table 4-22) in riparian areas, floodplains, wetlands and water bodies. Fewer NSO lease stipulations in Alternative A would result in greater adverse impacts to vegetation (primarily riparian vegetation) than Alternatives B, C, and D, where NSO lease stipulations and ROW avoidance and exclusion areas apply to more resource uses.	Alternative B would provide an NSO lease stipulation to oil and gas activity in riparian areas, floodplains, wetlands and water bodies plus an additional protection of 17,090 acres of surface and 82,743 acres of minerals from a 300 foot extension of the NSO buffer around these features. Total acres protected would be 30,487 BLM surface and 146,169 acres of BLM minerals. The application of ROW avoidance areas to more resource uses in Alternative B would result in fewer adverse impacts to vegetation (primarily riparian vegetation) than Alternative A where lease stipulations only apply to oil and gas activity.	Like Alternative B, Alternative C would provide an NSO lease stipulation to oil and gas activity in riparian areas, floodplains, wetlands and water bodies with a 300 foot buffer around these features. Increased benefits compared to the other Alternatives as the application of a more restrictive ROW exclusion areas to more resource uses in Alternative C. Alternative C would result in the least adverse impacts to vegetation (primarily riparian vegetation).	Like Alternatives B and C, Alternative D would provide an NSO lease stipulation to oil and gas activity in riparian areas, floodplains, wetlands and water bodies with a 300 foot buffer around these features. Alternative D would result in greater benefits than Alternative A and intermediate level of benefits compared to Alternative B and C as ROW restrictions would be a mixture of ROW exclusion and avoidance areas with most large scale activities excluded in areas with sensitive soils and riparian vegetation.
Impacts from Vegetative Communities management actions				
	Under all alternatives, meeting Rangeland Health Standards would ensure healthy sustainable rangelands, including riparian and wetland areas.			
	Managing prairie streams to ensure quality habitat for aquatic and wildlife species would maintain or improve riparian and wetland areas towards proper functioning condition (PFC).			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	Gathering of plants and plant parts for incidental use would have a negligible impact on vegetative communities.			
	Mechanical vegetation treatments would be considered at the project level and would not be limited. An average 559 acres of vegetation would be treated mechanically and with prescribed fire with the least short-term impacts to vegetative communities and the least beneficial impacts in the long term.	Mechanical vegetation treatments would be slightly more than Alternatives A and C for fuels treatments. An average 1,400 acres of vegetation would be treated mechanically and with prescribed fire annually with the most short-term impacts to vegetative communities and greater beneficial impacts in the long term than Alternatives A and C.	The options for mechanical vegetation treatments would be more limited than the other alternatives. An average 850 acres of vegetation would be treated mechanically and with prescribed fire annually with the least short-term impacts to vegetative communities and the least beneficial impacts in the long term.	Same as Alternative B.
	Revegetation seed mixes consist mostly of native species. Using native species or non-invasive seed mixes to protect wildlife habitat and watershed resources, on burned areas, and sites with high erosion potential would minimize proliferation of noxious weeds. Perennial non-native species may initiate persistent stands, which can inhibit colonization by native herbaceous species.	Same as Alternative A. Conversion of native pasture could be allowed on up to 8,220 acres in the long term. A potential loss of up to 3% of native plant communities would be possible over the long term.	Using only native species for revegetation of disturbed areas would require intense management for weed control but would provide long-term benefits of little or no maintenance once they are established. Using only native species may stabilize slopes, provide ground cover, and compete with invasive species less quickly than using introduced species.	Same as Alternative A. Conversion of native pasture could be allowed on up to 2,740 acres in the long term. A potential loss of up to 1% of native plant communities would be possible over the long term.
Impacts from Forests and Woodlands management actions	No impacts.	Treatment of poisonous plants using IPM methods would have a low effect on plant diversity within treatment areas and a	Impacts to plant diversity would be slightly less than Alternative B and slightly more than Alternative A.	Same as Alternative B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
		negligible effect on plant communities.		
Impacts from Rangeland management actions	No impacts.	Treatment of noxious weeds would be allowed in designated indigenous plant gathering sites given consideration to time of application and target species. Impacts to target plants within designated gathering sites would be negligible.	No impacts.	No impacts.
Impacts from Riparian and Wetlands management actions	Herbicide treatment around listed T&E and sensitive plant species would be considered on a case by case basis with less protection than Alternative C.	Same as Alternative A.	An herbicide buffer zone of 100 feet around listed T&E and sensitive plant species would provide the greatest protection to T&E and sensitive plant species of all the alternatives.	
Impacts from Noxious and Invasive management actions	Improvement of the fisheries habitat in Bear Butte Creek under Alternative A would improve riparian vegetation structure, diversity and stability.	Improvement of the fisheries habitat in Bear Butte Creek under Alternative B and C would improve riparian vegetation structure, diversity and stability. The improvement to riparian vegetation would be slightly less than Alternative A since feasibility would limit improvement projects.		
Impacts from Wildlife Including Special Status Species	Few protection measures applied for wildlife would result in more acres of surface disturbance than Alternatives B, C, and D with a greater impact to vegetation communities.	Intermediate amount of acres under protection measures would result in less impact to vegetation than Alternative A and more impact to vegetation than Alternative C.	Increased acreage under protection measures would result in less impact to vegetation than Alternatives A and B.	Intermediate amount of acres under protection measures would result in less effect on vegetative communities than Alternatives A and B and slightly more effect on vegetative communities than Alternative C.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Prairie Dogs management actions	The number of acres of prairie dog colonies treated would be less than Alternative B and more than Alternative C. There would be less vegetation converted to early seral communities in Alternatives A and B due to prairie dog expansion than Alternative C where prairie dogs can only be treated for public health and safety concerns. No limit to annually treated acres.	Greatest number of acres of prairie dog colonies treated where prairie dogs are causing adverse impacts to soil and vegetative resources. No impacts to vegetative communities from this alternative. Annual treatment limit would be 296 acres.	Least number of acres of prairie dog colonies treated where prairie dogs are causing adverse impacts to soil and vegetative resources. Prairie dog reintroductions would have moderate impact to vegetative communities with a noticeable conversion of vegetative communities from mid and later seral to early seral in any area where prairie dogs would be reintroduced on a large scale. Annual treatment limit would be 197 acres.	Same as Alternative D except prairie dog reintroductions would have moderate impact to vegetative communities with a noticeable conversion of vegetative communities from mid and later seral to early seral in any area where prairie dogs would be reintroduced on a large scale. Annual treatment limit would be 296 acres.
Impacts from Fire Management and Ecology management actions (Prescribed fire)	Rest from livestock grazing in grassland/shrubland habitats before and after burning as determined through site specific planning.	Resting areas from livestock grazing in grassland/shrubland habitats up to one year prior to prescribed fire treatment and a minimum of one growing season following treatments (with adaptive management flexibility) would promote vegetative recovery before reapplying grazing.	Resting areas from livestock grazing in grassland/shrubland habitats up to one year prior to prescribed fire treatment and minimum of two growing seasons following treatments (with adaptive management flexibility) would promote vegetative recovery before reapplying grazing. Vegetative recovery would be greater than Alternatives A, B, and D.	Same as Alternative B.
	Fuels treatments designed to protect and/or improve wildlife habitat and reduce the severity of wildfires would help achieve the vegetation goal of having a variety of habitat present with a diverse assemblage of native plant communities indicative of the Northern Great Plains.			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Cultural Resources management actions	Plant material gathering for incidental use would be allowed. Impacts would be slightly more than Alternatives B, C, and D but would still be negligible to plant communities.	Plant material gathering for incidental use would be allowed with the **exception** that only above ground gathering would be allowed in the Fossil Cycad and Fort Meade ACECs. Impacts would be negligible to plant communities.		
Resource Uses				
Impacts from Energy and Minerals	Mineral development on BLM land can result in the direct removal of vegetation. Rangeland health and forage production can be indirectly affected by mineral development through the introduction and spread of invasive plant species and soil loss. Both the direct and indirect impacts of mineral development are associated with surface disturbance caused by constructing road networks; drilling; installing well pads, pumps, pipelines, and water detention facilities; other associated infrastructure; and ongoing maintenance. The short- and long-term impacts to upland vegetative communities from oil and gas development are expected to be minor to negligible across all alternatives.			
Impacts from Livestock Grazing management actions	Managing for the Montana/Dakotas Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997) would maintain the functionality of all riparian areas and wetlands.			
	Biomass on allotments would be reduced on 271,000 acres available for grazing. Density and production of palatable species may be reduced in localized areas. The reduction in fine fuels would reduce frequency and intensity of wildfires. Fine fuels buildup and some grass species decadence may occur on 3,700 additional acres currently not lease for grazing in the Exemption Area.	Grazing effects would occur on 272,000 acres. Fine fuels buildup and some grass species decadence may occur on 2,100 additional acres unavailable for grazing in the Exemption Area.	Grazing effects would occur on 271,000 acres. Fine fuels buildup and some grass species decadence may occur on 3,700 additional acres unavailable for grazing in the Exemption Area.	Same as Alternative B.
	No impact.	Placement of grazing supplements at least ¼ mile away from riparian areas would improve		

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
		riparian vegetation through more uniform grazing distribution. Only allowing grazing in areas of high concentration of TES plants when the impacts are determined through interdisciplinary team review would ensure sustainability of TES plants. Impacts to riparian vegetation and TES plants from these management actions would be beneficial in the short and long term.		
Impacts from Recreation/Visitor Services management actions	Recreation activities would result in localized effects, such as vegetation disturbance, trampling, and removal due to camping and off-road travel activities. Any effects to vegetation would be minor and mostly temporary.			
Impacts from Travel Management actions	Travel would be allowed within 300 feet of roads to access campsite and cross country travel would be prohibited for big game retrieval. Alternative A would have fewer impacts to vegetative communities than Alternative B and more impacts to vegetative communities than Alternatives C and D.	Travel would be allowed within 300 feet of roads to access campsite and 300 feet to retrieve big game. Alternative B would have the greatest although minimal impacts to vegetative communities compared to Alternatives A, C, and D.	Travel would be allowed within 100 feet of roads to access campsite and cross country travel would be prohibited for big game retrieval. Alternatives C and D would have the least impacts to vegetative communities compared to Alternatives A and B. Closing and reclaiming roads and trails not necessary for management when water quality or soil health is likely to be impacted would have a minor beneficial impact on vegetation.	Travel would be allowed within 100 feet of roads to access campsite and cross country travel would be prohibited for big game retrieval. Alternatives C and D would have the least impacts to vegetative communities compared to Alternatives A and B.
Impacts from Forest and Woodland Products management actions	Least acres of understory vegetation that would receive benefits from forest and woodland product removal.	Greatest number of acres of understory vegetation that would receive benefits from forest and woodland product removal.	Same as Alternative A.	Same as Alternative B.
Impacts from Lands and Realty management actions	No impact to vegetative communities.	Burial of utility lines would increase the amount of surface disturbance for utility lines compared to above ground lines. Increased surface disturbance would result in long-term loss of vegetation, soil erosion, and introduction of invasive species. Impacts to vegetative resources would be negligible across the planning area.		

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Land Tenure management actions	A land transfer to the Black Hills National Cemetery at Fort Meade ACEC would result in the conversion of native mixed prairie vegetation from the designated number of acres to introduced lawn species.	Land transfers at Fort Meade ACEC would result in the conversion of native mixed prairie and non-native tame pasture to introduced lawn species and pavement on up to 220 acres of land.	No impact to vegetative communities as no land transfers would be approved at Fort Meade ACEC.	Same as Alternative B.
Impacts from Renewable Energy management actions	No specific management action.	Alternative B would have 189,153 acres of renewable energy ROW avoidance areas, compared to the 199,420 acres of renewable energy ROW exclusion areas in Alternative C (Table 4-26). It is still projected that only 768 acres of short-term surface disturbance would occur and 192 acres of long-term disturbance from renewable energy development. Impacts to vegetation would be negligible due to the small percentage (0.3%) of the decision area being disturbed.	There would be 199,420 acres of renewable energy ROW exclusion areas in Alternative C compared to the 189,153 acres of renewable energy ROW avoidance areas in Alternative B (Table 4-26). It is still projected that only 588 acres of short-term surface disturbance would occur and 147 acres of long-term disturbance from renewable energy development. Impacts to vegetation would be negligible due to the small percentage (0.2%) of the decision area being disturbed.	There would be 118,904 acres of renewable energy ROW exclusion areas and 78,636 acres of avoidance areas in Alternative D compared to the 189,153 acres of renewable energy ROW avoidance areas in Alternative B and 199,420 acres of renewable energy ROW exclusion areas in Alternative C (Table 4-26). It is still projected that only 884 acres of short-term surface disturbance would occur and 221 acres of long-term disturbance from renewable energy development. Impacts to vegetation would be negligible due to the small percentage (0.3%) of the decision area being disturbed.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts to Noxious Weeds and Invasive Species FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Weed Treatments	Alternative A would allow for the highest number of acres to be treated annually using IPM methods	Alternative B would allow for slightly less acres than Alternative A but more than Alternative C to be treated annually.	Alternative C would allow for least number of acres to be treated annually using IPM methods.	Same as Alternative B
Impacts from Climate	Potential climate changes, i.e. temperature and precipitation, would affect invasive species and noxious weeds. The change would not necessarily be as an increase or decrease of infestation size, rather the species present due to the climate change.			
Impacts from Soil Resources management actions	Surface-disturbing activities remove protective vegetative cover and /or crusts and can alter soil physical, chemical, and biological properties to varying degrees depending on the amount, location and type of disturbance; resulting in increased soil susceptibility to wind and water erosion, decreased soil quality, site productivity, and the potential for the introduction and spread of invasive species and noxious weeds.			
Impacts from Water Resources	No related management action exists.	This alternative would have a greater impact than Alternative C, but less than Alternative A, on the potential introduction and spread of invasive species or noxious weeds by utilizing road and trail restrictions on routes not necessary for management when water quality is likely to be an issue.	This alternative would have the greatest impact on reducing the potential introduction and spread of invasive species or noxious weeds by closing and reclaiming roads not necessary for management when water quality is likely to be impaired.	Same as Alternative C.
Impacts from Vegetative Communities management actions				
Impacts from Forests and Woodlands management actions	Forests and Woodlands product sales and treatments pose the risk of opening areas to invasive species depending on the amount of disturbance caused by each sale or treatment.			
	PSQ/7000 tons/year. New roads would be constructed to the minimum standard	PSQ/7000 tons/year. New permanent roads may be built for long-term management of	PSQ/6000 tons/year. No new permanent roads would be constructed for forest	Same as Alternative C.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	necessary to remove forest and woodland products.	areas where multiple entries would be necessary to meet objectives.	management.	
Impacts from Rangeland management actions	Rangeland Improvements pose the risk of opening areas to invasive species or noxious weeds depending on the amount of disturbance caused by each improvement.			
	3 Range Improvements/year.			
Impacts from Noxious and Invasive management actions	This alternative would have the least impact (potential to treat the greatest number of acres) on invasive species/noxious weeds.	This alternative has a higher impact (potential to treat less acres) than Alternative A, but more than Alternative C on invasive species/noxious weeds.	This alternative has the greatest impact (potential to treat the least number of acres) on invasive species/noxious weeds.	Same as Alternative B.
Impacts from Special Status Plants management actions	This alternative does not specify any related management action.	Same as Alternative A	This alternative has greatest impact (potential to treat the least number of acres) on invasive species/noxious weeds by requiring spot treatments with a 100 foot herbicide buffer zone around listed T&E and sensitive plant species.	Same as Alternative B.
Impacts from Wildlife: Including Special Status Species management actions				
Bighorn sheep management actions	This alternative (9 mile buffer strip) would have a greater impact than Alternative B and less impact than Alternative C on the use of sheep and goats for the management of invasive species in bighorn sheep habitat.	This alternative (5 mile buffer strip) would have the least impact on decreasing the potential for the use of sheep and goats for the management of invasive species in bighorn sheep habitat.	This alternative (10 mile buffer strip) would have the have the greatest impact on decreasing the potential for use of sheep and goats for the management of invasive species in bighorn sheep habitat.	Same as Alternative B.
Impacts from Greater Sage-Grouse management actions	This alternative would have a greatest impact (least number	This alternative would allow spot treatments of weeds	This alternative would have the least impact (higher	Same as Alternative C.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	of potential acres to be treated) over Alternatives B or C, as it does not allow treatments within a 2 mile buffer zone of suitable nesting habitat of leks from March 1 – June 30.	using IPM methods within suitable nesting or brood rearing habitat of known leks from March 1 – June 30 in PPAs only.	number of potential acres that could be treated) as it would allow spot treatments of weeds using IPM methods within suitable nesting or brood rearing habitat of known leks from March 1 – June 30.	
Impacts from Prairie dogs management actions	This alternative does not specify the number of acres that can be treated annually.	This alternative (no more than 15% of total acreage) would allow for the highest number of acres to be treated annually.	This alternative (no more than 10% of total acreage) would allow for a lower number of acres to be treated than Alternative B.	Same as Alternative B.
Impacts from Fisheries management actions including Aquatic and Special Status Species	This alternative does not specify any related management action.	Increasing fishing opportunities in Alternative B and C has the potential in increase the introduction and spread of invasive aquatic species.		Same as Alternatives B and C.
	Provide additional water sources that would benefit wildlife would increase the potential for introduction or spread of invasive species or noxious weeds.	Developing additional water sources and opportunities to maintain or increase water levels to benefit wildlife, fisheries, other aquatic species, and livestock in Alternatives B and C would have the potential for the introduction or spread of invasive species or noxious weeds.		Same as Alternatives B and C.
Impacts from Fire Management and Ecology management actions	This alternative would have the least impact on the potential for the introduction or spread of invasive species/noxious weeds with only 559 acres (346 mechanical and 213 acres fire) targeted for treatments.	This alternative would have the greatest impact on the potential for the introduction or spread of invasive species/noxious weeds with 1,400 acres (400 mechanical and 1,000 acres fire) targeted for treatments.	This alternative would have a greater impact than Alternative A, but less than Alternative B, on the potential for the introduction and spread of invasive species or noxious weeds with 850 acres (350 mechanical and 500 acres fire) targeted for treatments.	Same as Alternative B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Energy and Minerals management actions				
Impacts from Leasable Minerals management actions	Highest potential from least restriction and most surface-disturbing activities and higher levels of travel associated leasable mineral development.	Intermediate risk of weed infestation and spread.	Slightly lower risk of noxious weed infestation or spread as less acres disturbed and less travel associated with leasable mineral development.	Impacts similar to Alternative B.
Impacts from Salable Minerals management actions	Little difference between Alternatives as little interest or potential for salable mineral development exists.			
Impacts from Locatable Minerals management actions	Highest potential from least restriction and most surface-disturbing activities.	Intermediate level of weed infestation and spread.	Slightly lower risk of noxious weed infestation or spread as less acres disturbed.	Impacts similar to Alternative B.
Impacts from Renewable Energy management actions	Highest potential from least restriction and most surface-disturbing activities.	Intermediate risk of weed infestation and spread.	Lower risk of noxious weed infestation or spread as fewer acres disturbed from projects and less travel associated with projects.	Risk of spread and infestation of noxious weeds lower than Alternative B but higher than Alternative C.
Impacts from Livestock Grazing management actions	The impacts to invasive species/noxious weeds from Livestock Grazing are anticipated to be minimal and vary only slightly between alternatives. Potential impacts include utilization, supplemental feeding and range improvements.			Alternatives A, B, and C, are basically the same – No preferred determined.
Impacts from Recreation/Visitor Services management actions	This alternative would have the least potential for new infestations introduced by recreational visitation or activities but would be harder to identify because there are no destination areas (exception - Ft. Meade ACEC totaling 6,574 acres). Invasive species that would be more likely to be transported would be those	This alternative would have slightly higher potential for the introduction and spread of invasive species/noxious weeds by designating Ft Meade and the Exemption Area as Special Recreation Management Areas (SRMAs), totaling 11,652 acres (Fort Meade ACEC 6,574 acres and the Exemption Area 5,078	Designating Greater Sage-Grouse PPAs as an ACEC may result in a slight increase in visitor use, but such increase would not likely result in a measureable increase in the spread of infestation of noxious weeds in the Greater Sage-Grouse PPAs/ACEC. The impacts for Fort Meade would be the same as Alternative B.	Same as Alternative B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	that occur locally.	acres), thereby slightly increasing the amount of recreational visitation and activities.		
Impacts from Travel Management actions	Prohibiting motorized wheeled cross-country travel to retrieve big game animals minimizes the potential spread/introduction of invasive species.	This alternative would increase the potential for spread of invasive species by allowing travel within 300 feet from nearest road to retrieve big game animals.	Same as Alternative A	Same as Alternative C.
	This alternative does not specify any related management action.	This alternative would have the greatest potential for the introduction and spread of invasive species/noxious weeds as this alternative provides for the management of 313 acres of Back Country, 261,325 acres of Middle Country, and 11,655 acres of Front Country Recreation Setting Characteristics.	This alternative would have less potential for the introduction and spread of invasive species/noxious weeds than any other alternative. It provides for the management for 178,163 acres of Back Country, 88,539 acres of Middle Country, and 6,591 acres of Front Country Recreation Setting Characteristics.	Same as Alternative B.
Impacts from Forest and Woodland Products management actions	This alternative would have a greater impact than Alternative C, but less than Alternative B, since there is the potential for roads to be constructed to minimum standards.	This alternative would have the greatest impact to noxious weeds, as it allows for the construction of new roads, rerouting of existing authorized roads.	This alternative would have least impact on noxious weeds than Alternatives A and B, since it does not allow for new permanent roads or rerouting of existing roads.	Same as Alternative B.
Impacts from Lands and Realty				
Impacts from Land Tenure management actions	Any new acquisition of lands/easements would need to be inventoried for invasive species/noxious weeds to determine the impact and cost of management of that parcel.			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	Any disposal lands would have to be inventoried for the presence of invasive species/noxious weeds in order to disclose this information.			
Impacts from Rights-of-Way management actions	This alternative does not provide any related management action.	This alternative would have less impact than Alternative C on the potential introduction or spread of invasive species or noxious weeds by requiring all fiber-optic, telephone and power lines that can be safely buried would be buried or sited to have least impact on resources.	This alternative would have the greatest impact on the potential introduction or spread of invasive species or noxious weeds through ground disturbance by all fiber-option, telephone, power, and other lines to be buried.	Same as Alternative B.
Impacts from Transportation Facilities and Access management actions	This alternative would have less impact for the potential introduction and spread of invasive species/noxious weeds than Alternative C, but greater than Alternative B, as it would allow construction of roads to minimum standards necessary, unless required to have a higher standard.	This alternative would have the greatest impact for the potential introduction and spread of invasive species/noxious weeds as it allows for construction of new permanent roads, rerouting and maintenance of existing authorized roads.	This alternative would have the least impact for the potential introduction and spread of invasive species/noxious weeds as it would not allow for the construction of new permanent roads except as required by law, regulation or policy.	Same as Alternative C.
	Motorized travel allowed only on existing roads and trails.	Motorized travel allowed on existing roads and trails, designated roads and trails in TMAs. New roads and trails may be developed.	Motorized travel allowed on designated roads and trails. No new roads or trails would be developed. Roads and trails may be closed to protect resources.	Same as Alternative B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Special Designations				
Impacts from Areas of Critical Environmental Concern management actions				
	The impacts to invasive species/noxious weeds from ACECs would be minimal and vary slightly between alternatives, with Alternative B having the least impact by the possible transfer of up to 220 acres from BLM to others.			Same as Alternative B.
Impacts to Wildlife FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Climate	Potential changes in climate that would affect temperature precipitation would affect wildlife and their habitat. Changes to seasonal weather patterns, ambient air temperatures, carbon levels, and the timing and amount of precipitation could result in direct, long-term impacts to many species of wildlife. Since the specific type or degree of changes to climatic conditions is not fully understood at this time, determining impacts to individual species over the next 20 years is very difficult. Wildlife may be impacted by changes to vegetation that may occur through climate change. Changes to vegetation would alter habitat quality and quantity and foraging opportunities. Management actions would build resilience to systems, prevent communities from passing thresholds, and allow freedom of movement for wildlife species, improving the ability of wildlife species to adapt to changing conditions Adaptation to changing conditions through adaptive management practices would provide the best means to reduce adverse impacts to wildlife.			
Impacts from Soil Resources management actions	Restrictions to sensitive soils should benefit wildlife and their habitat by diminishing the potential soil erosion.			
Impacts from Water Resources management actions	Development of water sources in appropriate places could be beneficial to wildlife. This alternative is least restrictive on placement of water source and could be the least beneficial to wildlife.	Development of water sources in appropriate places could be beneficial to wildlife.	Development of water sources for wildlife and livestock would be beneficial to wildlife. Improving water quality would be beneficial. This alternative would provide the most direct, positive impact to wildlife as projects would be prioritized based on how well they benefit wildlife and other natural resources.	Development of water sources in appropriate places could be beneficial to wildlife.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Vegetative Communities management actions	Providing for diverse vegetation types with a mixture of all seral stages of vegetation would benefit wildlife by creating many different types of habitat and forage.			
Impacts from Forests and Woodlands management actions	Maintaining healthy forests and woodlands would potentially benefit habitat quality which would positively affect wildlife and their habitat.			
Impacts from Rangeland management actions	Maintaining or improving the conditions of rangeland so that the standards for rangeland health are met would benefit wildlife by improving habitat and allowing residual forage.			
Impacts from Riparian and Wetlands management actions	Ensuring that riparian and wetlands are meeting PFC would benefit wildlife species			
Impacts from Noxious and Invasive Species management actions	Utilizing IPM methods for invasive species would help limit the negative impacts, although total eradication of invasive species is not possible, to wildlife species and their habitats.			
Impacts from Special Status Plants management actions	Negligible.	Potentially could have negative effects on wildlife habitat by limiting habitat enhancement or development in an area.		
Impacts from Wildlife management actions including Special Status Species Management	Provides the least protection of wildlife and special status species habitat but would protect habitat of importance such as riparian areas and areas near grouse leks.	Provides more protection than Alternative A, but protects fewer acres and fewer or shorter seasonal restriction on BLM-administered lands compared to Alternatives C and D. An NSO stipulation in Greater Sage-Grouse PPAs would shift some oil and gas production from BLM-administered lands onto other lands adjacent or within PPAs, but only in areas that are not leased and producing.	This alternative would have the most potential to protect special status species habitat on BLM-administered land due to increased acres protected or high levels of restrictions. A closure of oil and gas leasing would have direct impacts similar to an NSO. Under an oil and gas closure, BLM lands in PPAs would receive beneficial impacts to wildlife but in some cases, adverse cumulative impacts would occur from the shifting	Provides slightly higher levels of protection than Alternative B but less than Alternative C. Compared to Alternative C, the balance of resource use and protection would result in more overall control of activities and more opportunity for BLM to mitigate impacts as there would be fewer situations where the proposed use is moved to private or non-federal lands as a result of BLM restrictions or closures.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
			of activity or infrastructure onto other lands. Refer to the cumulative impacts section of wildlife in Chapter 4. Under an oil and gas closure, revenue from the drainage of oil and gas from federal lands onto operations on other lands would be lost while under an NSO restriction, this revenue would not be lost. Withdrawal of other types of minerals would not increase the level of protection as most high potential locatable minerals such as bentonite are already claimed and these claims would need to be honored as valid existing rights.	
Impacts from Fisheries including Special Status Species management actions	Developing fisheries with certain predatory fish species that could potentially prey on waterfowl, shorebirds and other water related species.			
Impacts from Fire Management and Ecology management actions	Potential for surface-disturbing activities associated with Fire Management and Ecology could impact wildlife species and their habitat depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion that would affect water quality. Direct disturbance to wildlife would occur from noise and the presence of people equipment during mechanical or prescribed fire treatments that would be undertaken to reduce pine density or alter vegetative communities. Alterations to vegetative communities in forested areas would result in more forage for the majority of wildlife species as herbaceous and shrubs communities respond positively to the reduction in competition from trees and increased sunlight that reaches understory vegetation.			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	In the short term, hiding and thermal cover would be reduced from treatments. Over the long term, impacts to wildlife and water quality would be beneficial as the potential for large, hot, severe wildfires and the resultant major, long-term negative impacts to soil, water quality and vegetation are reduced. Application of forestry and fire BMPs and guidelines would ensure that disturbed sites would revegetate quickly reducing the water quality impacts to short-term impacts. *Specific impacts to soil, water, and vegetation from large scale fires is also discussed in the soil, water, and vegetation sections.			
	Prescribed fire in certain habitats can be very beneficial.			
Impacts from Cultural Resources management actions	Potential to affect.	Potential restriction to protect cultural resources would provide minor long-term beneficial impacts to wildlife and their habitats.		
Impacts from Paleontological Resources management actions	Potential to affect.	Restriction to protect paleontological resources would result in minor long-term beneficial impacts to wildlife and their habitats.		
Impacts from Visual Resources management actions	This alternative would provide the least level VRM restrictions and would also result in the lowest levels of wildlife protection that would occur by limiting development and disturbance through VRM restrictions. 6,224 acres would receive moderate protection through Class II or III restrictions. 531 acres would receive minor restriction through Class IV restrictions. The rest of the planning area (264,997 acres) would be managed on a case-by-case basis.	Would provide more protection for wildlife than Alternative A but less than Alternative C. Restriction to protect visual resource values would result in moderate long-term beneficial impacts to wildlife and their habitats. 6,828 acres would receive moderate protection through Class II or III restrictions. 264,924 acres would receive minor protection through Class IV restrictions.	This alternative would provide the most protection to wildlife by providing the most acres restricted to visual obstructions and development. 190,212 acres would receive moderate protection through Class II or III restrictions. 80,883 acres would receive minor protection through Class IV restrictions.	This alternative would provide more protection to wildlife than Alternative B but less than Alternative C by providing acres restricted to visual obstructions and development. 11,911 acres would receive moderate protection through Class II or III restrictions. 259,841 acres would receive minor protection through Class IV restrictions.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Resource Uses				
Impacts from Energy and Minerals management actions	Surface-disturbing activities from leasable, locatable, and salable minerals would impact wildlife to varying degrees depending on the amount, location, timing, and type of disturbance. The analysis of impacts described below is a summary of impacts for activities that are expected to occur under each alternative for the life of the plan. Surface-disturbing and disruptive activities mainly vary by alternative for oil and gas activities.			
Impacts from Leasable Minerals management actions	Alternative A would result in the most development of oil and gas resources. Alternative A provides minimal measures of protection for wildlife.	Alternative B would result in the same level of development of oil and gas resources as Alternative A; however, Alternative B provides more protective measures for wildlife compared to Alternative A, but less than Alternative C.	Oil and gas production would be less than Alternatives A and B because of increased restrictions and fewer exceptions. This alternative would provide the greatest protection for wildlife. Greater Sage-Grouse PPAs/ACEC would be closed to oil and gas leasing and would not be under an NSO protection as in Alternative B and C. Greater Sage-Grouse PPAs/ACEC would not be managed as NSOs (as in Alternatives B and D) and would be closed to leasing. CSU acres are lower than Alternatives B and D because more acres are managed as NSO.	Oil and gas production would be less than Alternatives A and B and possibly more than Alternative C because of increased restrictions and fewer exceptions.
Cumulative Acres of Federal Mineral Estate Available or Unavailable for Oil and Gas Leasing				
Closed	Fort Meade and Fossil Cycad Surface: 6,894 acres Subsurface: 6,894 acres	Fort Meade Surface: 6,574 acres Subsurface: 6,574 acres	Greater Sage-Grouse PPAs, BHAD, Fort Meade, Fossil Cycad, and Bear Butte Surface: 100,160 acres	Fort Meade, Fossil Cycad, and Bear Butte Surface: 6,894 acres Subsurface: 7,304 acres

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
			Subsurface: 309,576 acres	
No Surface Occupancy (NSO)	Surface: 15,489 acres Subsurface: 87,349 acres	Surface: 105,837 acres Subsurface: 404,306 acres	Surface: 43,897 acres Subsurface: 355,396 acres	Surface: 107,025 acres Subsurface: 406,005 acres
Controlled Surface Use (CSU)	Surface: 2,954 acres Subsurface: 19,613 acres	Surface: 10,561 acres Subsurface: 158,501 acres	Surface: 1,535 acres Subsurface: 1,535 acres	Surface: 10,031 acres Subsurface: 146,574 acres
Timing Limitations (TL)	Surface: 115,204 acres Subsurface: 450,032 acres	Surface: 61,186 acres Subsurface: 305,570 acres	Surface: 45,836 acres Subsurface: 244,689 acres	Surface: 66,821 acres Subsurface: 340,948 acres
Standard Lease Terms	Surface: 103,033 acres Subsurface: 798,690 acres	Surface: 59,416 acres Subsurface: 487,627 acres	Surface: 52,146 acres Subsurface: 451,382 acres	Surface: 52,803 acres Subsurface: 461,747 acres
Impacts from Salable Minerals management actions	The limited level of surface-disturbing salable minerals activities would not result in major impacts to wildlife. If activities reach the upper end of projected levels, minor, long-term impacts from surface disturbance would occur. Disturbance from people and equipment would result in minor, short-term impacts to wildlife. Some indirect adverse impacts to wildlife could occur from removal of vegetation and sedimentation into water bodies but such impacts would be negligible provided that BMPs and stipulations are followed.	Same as Alternative A except the abandoned Black Hills Army Depot Site (BHAD) would be closed (12,709 acres).	Same as Alternative B except Greater Sage-Grouse PPAs/ACEC would be closed to salable minerals. Affected acres that would be closed include: Surface: 93,266 acres Subsurface: 289,563 acres	Same as Alternative B.
Impacts from Locatable Minerals management actions	Locatable mineral development is not expected to vary by alternative. If activities reach the upper end of projected levels, minor, long-term impacts to wildlife would occur from surface disturbance, noise levels, and disturbance from		Same as Alternatives A and B except Greater Sage-Grouse PPAs/ACEC would be withdrawn from locatable	Same as Alternatives A and B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	people and equipment. Some adverse impacts to wildlife could occur from loss of habitat, disturbance and erosion such as sedimentation or infrequent cases of pollution being released into water bodies but such impacts would be minor provided that acreages are kept minimal, and BMPs and stipulations are followed.		minerals. Affected acres that would be withdrawn include: Surface: 93,266 acres Subsurface: 289,563 acres	
Impacts from Livestock Grazing management actions	Potential to affect.	Changing livestock fences from woven wire to less restrictive wildlife fence would reduce wildlife mortality and facilitate movement of wildlife.		
	Restrictions discouraging domestic sheep grazing in or near bighorn sheep ranges would be at an adequate level to protect bighorn sheep (9 miles) but such restriction would not be mandatory. This alternative would provide a larger separation distance between bighorn and domestic sheep than Alternative B but would provide less protection than Alternatives C and D.	Restrictions prohibiting domestic sheep grazing on public land in and within a 5 mile radius of bighorn sheep ranges would provide an intermediate level of protection from disease transmission from domestic sheep to bighorn sheep.	Restrictions prohibiting domestic sheep grazing on public land in and within a 15 mile radius of bighorn sheep ranges would provide the highest level of protection of disease transmission from bighorn sheep to domestic sheep.	Restrictions prohibiting domestic sheep grazing on public land in and within a 15 mile radius of bighorn sheep ranges would provide the highest level of protection of disease transmission from bighorn sheep to domestic sheep.
	Lack of adaptive management measures for increasing or decreasing livestock use would result in less proactive management and decreased benefit wildlife compared to Alternative B. Livestock use levels could still be reduced or increased based on current regulations but such changes would take much longer to	Adaptive management measures that allow increase or decrease of livestock grazing based on actual conditions would result in the most flexibility to respond to changing conditions.	Lack of adaptive management measures for increasing or decreasing livestock use would result in less proactive management and decreased benefit wildlife compared to Alternative B. Livestock use levels could still be reduced or increased based on current regulations but such changes would take much longer to implement compared to Alternative B.	

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	implement compared to Alternative B.			
	Moderate long-term adverse impacts to wildlife habitat could occur as there would be less flexibility for management of livestock use before or after prescribed fire.	Adaptive management measures that would allow more flexibility for management of livestock use before and after prescribed fire would benefit wildlife.		
Impacts from Recreation/Visitor Services management actions	Management restrictions on habitat for wildlife species would cause no inconvenience to recreation users.	Management restrictions on habitat for wildlife species could cause negligible inconvenience to recreation users.	Management restrictions on habitat for wildlife species could cause minor inconvenience to recreation users.	Same as Alternative B.
Impacts from Travel Management actions	Potential to affect.	Big game and other wildlife species could be negatively impacted by the use of roads in important wildlife habitat. The impacts would be moderate in the long term.	Big game and other wildlife species could be negatively impacted by the use of roads in important wildlife habitat. The impacts would be moderate in the long term. This alternative would be most beneficial to wildlife as no new permanent roads would be built for forestry and fuels projects and travel and road ROWs around important wildlife habitat would be limited the most.	Same as Alternative B.
Impacts from Forest and Woodland Products management actions	The potential unrestricted use of snag and cavity bearing trees as a forest product would have a negative effect on wildlife	Impacts would be the same as Alternative A.	This alternative would restrict the removal of snag and cavity bearing trees the most, positively benefitting wildlife species that use this	Impacts would be the same as Alternative C.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	species that use this habitat.		component of habitat.	
	The disturbance from removing forest products would have a short-term negative impact from the displacement of wildlife. The long-term increase in forage and browse would be a positive benefit to most species of wildlife.	The disturbance from removing forest products would have a short-term negative impact from the displacement of wildlife. The long-term increase in forage and browse would be a positive benefit to most species of wildlife. Forest product removal completed to enhance wildlife habitat would be beneficial.		
Impacts from Lands and Realty management actions	Most lands and realty actions such as ROWs are surface-disturbing and disruptive activities and would have negative impacts to wildlife to varying degrees depending on the amount, location, timing, and type of disturbance. The impacts described below are for specific realty actions.			
Impacts from Land Tenure management actions	Acquiring lands that meet the land tenure adjustment criteria would benefit wildlife and wildlife habitat.			
Impacts from Rights-of-Way management actions Impacts from Leases and Permits	Lack of protective measures would result in negative impacts to wildlife. This alternative provides the least protection for wildlife. See Table 2-1 "Rights-of-way, Cumulative acres of BLM-Administered Surface Acres Affected" for affected acres.	Less restrictive requirements including avoidance areas and placement for powerlines, roads and other realty actions would result in less protections and greater impact to wildlife. See Table 2-1 "Rights-of-way, Cumulative acres of BLM-Administered Surface Acres Affected" for affected acres.	More restrictive requirements including exclusion areas and placement for powerlines, roads and other realty actions would result in greater protections and less impact to wildlife. This alternative would be the most beneficial to wildlife. See Table 2-1 "Rights-of-way, Cumulative acres of BLM-Administered Surface Acres Affected" for affected acres.	Restrictive requirements including avoidance and exclusion areas and placement for powerlines, roads and other realty actions would result in greater protections and less impact to wildlife. This alternative would be more beneficial to wildlife and their habitats than Alternative B but less than Alternative C. See Table 2-1 "Rights-of-way, Cumulative acres of BLM-Administered Surface Acres Affected" for affected acres.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Withdrawals	Mineral withdrawals 6,894 acres for the ACECs to protect resources and resource extraction could be beneficial to wildlife.	Withdrawals of 7,304 acres to protect resources and resource extraction could be beneficial to wildlife. Withdrawals for facilities such as the national cemetery or national guard facilities would reduce the amount of wildlife habitat available.	Withdrawals of 100,570 acres to protect resources and resource extraction could be beneficial to wildlife. This alternative has the greatest potential for withdraws that would have a positive impact on wildlife habitats and other resources.	Withdrawals of 7,304 acres to protect resources and resource extraction could be beneficial to wildlife. Withdrawals for facilities such as the national cemetery or national guard facilities would reduce the amount of wildlife habitat available.
Impacts from Transportation Facilities and Access management actions	Potential to affect.	Greater access to public lands would have a greater negative impact on wildlife and their habitat. Through increased disturbance, disruption and hunting pressure.	Access could have a negative impact on wildlife and their habitat. Through increased disturbance, disruption and hunting pressure.	Impacts would be the same as Alternative B.
Impacts from Renewable Energy management actions	Least restrictive requirements for renewable energy facilities placement would have greater negative impact to wildlife and their habitat. 267,768 acres (98% of BLM surface acres in western SD) would be open to renewable energy development. 5,522 acres would be renewable energy ROW exclusion areas.	Less restrictive requirements including avoidance areas for renewable energy facilities placement would have negative impact to wildlife and their habitat. 184,137 acres (30.89%) of BLM surface estate in western SD would be open to renewable energy development. 189,153 acres would be renewable energy ROW avoidance areas.	More restrictive requirements including exclusion areas for renewable energy facilities placement would have greater positive impacts to wildlife and their habitats. This alternative would be most beneficial to wildlife and their habitats. 73,870 acres (27% of BLM surface estate in western SD) would be open to renewable energy development. 199,420 acres would be renewable energy ROW	More restrictive requirements including exclusion and avoidance areas for renewable energy facilities placement would have positive impacts to wildlife and their habitats. This alternative would be more beneficial to wildlife and their habitats than Alternative B but less than Alternative C. 75,751 acres (27.7% of BLM surface estate in western SD) would be open to renewable energy development.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
			exclusions.	78,636 acres would be renewable energy ROW avoidance areas. 118,904 acres would be renewable energy ROW exclusion areas.
	Impacts as result of development of renewable energy on BLM-administered surface estate in eastern South Dakota would be negligible as those lands are extremely limited (less than 1% of the planning area) and most surface estate in eastern South Dakota is under the reservoirs of the Missouri River or on islands of the Missouri River.			
Special Designations				
Impacts from Fort Meade ACEC designation	Many lands and realty actions are limited or restricted within the 6,574 acre ACEC and would have greater beneficial impacts for wildlife and their habitat.	Many lands and realty actions are limited or restricted within the 6,574 acre ACEC and but less restrictive than Alternative A and would have less beneficial impacts for wildlife and their habitat.	Many lands and realty actions are limited or restricted within the 6,574 acre ACEC and less restrictive than Alternative A and more restrictive than Alternative B and would be more beneficial to wildlife and their habitat than Alternative B.	Many lands and realty actions are limited or restricted within the 6,574 acre ACEC and but less restrictive than Alternative A and would have less beneficial impacts for wildlife and their habitat.
Impacts from Fossil Cycad ACEC designation	Many lands and realty actions are limited or restricted within the 320 acre ACEC and would have greater beneficial impacts for wildlife species and their habitat.			
Impacts from designation of Greater Sage-Grouse PPAs as an Area of Critical Environmental Concern (ACEC)	No designation.	No designation	ACEC designation would not result in any additional beneficial impacts to wildlife or special status species as numerous protective measures are provided for in PPAs by Alternatives B and D. Some increase in visitor use may occur as a result of	No designation.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
			ACEC designation but impacts would be minor.	
Impacts from National Trails designations	Increased use of these trails could cause disruption and displacement of special status species.			
Impacts from Social Conditions	Social conditions and needs can affect the determination of how important wildlife and their habitats are. This impact can be negative or positive depending on the need.			
Impacts from Economic Conditions	The economic value of wildlife watching and hunting is a positive impact. Restrictions or avoidances could be positive to wildlife but very costly and time consuming to industry.			
Impacts to Special Status Species FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Climate	Potential changes in climate that would affect temperature precipitation would affect wildlife and their habitat. Changes to seasonal weather patterns, ambient air temperatures, atmospheric carbon levels, and the timing and amount of precipitation could result in direct, long-term impacts to many special status species. Since the specific type or degree of changes to climatic conditions is not fully understood at this time, determining impacts to individual species over the next 20 years is very difficult. Special status species may be impacted by changes to vegetation that may occur through climate change. Changes to vegetation would alter habitat quality and quantity and foraging opportunities. Adaptation to changing conditions through adaptive management practices would provide the best means to reduce adverse impacts to special status species.			
Impacts from Soil Resources management actions	Higher potential for soil erosion and associated impacts to special status species and habitat.	Restrictions to sensitive soils should benefit special status species and their habitat by diminishing the potential soil erosion.		
Impacts from Water Resources management actions	Impacts to special status species would vary depending on the species present in proposed project areas and the type and location of the water development. This alternative is least restrictive on placement of	Impacts to special status species would vary depending on the species present in proposed project areas and the type and location of the water development.	Development of water sources for wildlife and livestock would generally benefit special status species. Improving water quality would be beneficial. This alternative would provide the most direct, positive impact to special status species as water	Impacts would be the same as Alternative B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	water source and could be the least beneficial to wildlife.		development projects would be prioritized based on how well they benefit special status species, other wildlife and other natural resources.	
Impacts from Vegetative Communities management actions	Providing for diverse vegetation types with a mixture of all seral stages of vegetation would benefit wildlife by creating many different types of habitat and forage.			
Impacts from Forests and Woodlands management actions	Maintaining healthy forest and woodlands would potentially benefit habitat quality which would positively affect wildlife and their habitat. Moderate levels of short-term disturbance would occur as stands of forest are thinned or burned.			
Impacts from Rangeland management actions	Rangelands meeting standards would be beneficial by affecting habitat quality which would affect wildlife and their habitats.			
Impacts from Riparian and Wetlands management actions	Riparian and wetlands that are meeting PFC would be beneficial to wildlife species and their habitats.			
Impacts from Noxious and Invasive Species management actions	Utilizing IPM methods for invasive species would help limit the negative impacts to wildlife species and their habitats by limiting completion for resources between native wildlife and noxious and invasive species. Some negative impacts from would remain as total eradication of all noxious and invasive species is not possible.			
Impacts from Wildlife management actions including Special Status Species	Provides the least protection of wildlife and special status species habitat but would protect habitat of importance such as riparian areas and areas near sage-grouse and sharp-tailed grouse leks.	Provides more protection than Alternative A, but protects fewer acres or allows more use to occur on BLM-administered lands compared to Alternatives C and D. An NSO stipulation in Greater Sage-Grouse PPAs would shift some human use and infrastructure tied to oil and gas production from BLM-administered lands	This alternative would have the most potential to protect special status species habitat on BLM-administered land due to increased acres protected or high levels of restrictions. A closure of oil and gas leasing would have similar direct impacts as an NSO. Under an oil and gas closure, BLM lands in PPAs/ACEC would receive beneficial	Provides slightly higher levels of protection than Alternative B but less than Alternative C. Impacts from the NSO in Greater Sage-Grouse PPAs would the same as Alternative B. Impacts from the identification of sage-grouse habitat restoration areas would be the same as

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
		onto other lands within PPAs and in some cases to BLM and other lands directly adjacent to PPAs but only in areas that are not leased and producing as valid existing rights would be honored. The primary areas of mineral value that have little or no valid existing mineral rights are the moderate oil and gas potential areas and about ¼ of the high oil and gas potential as shown in Figure 4-1.	impacts to wildlife, but in some cases, adverse cumulative impacts would occur from the shifting of activity or infrastructure onto other lands. Refer to the cumulative impacts section of Chapter 4. Under an oil and gas closure, revenue from the drainage of oil and gas from federal lands onto operations on others lands would be lost while under an NSO restriction, this revenue would not be lost. Withdrawal of other types of minerals would not increase the level of protection as most high potential locatable minerals such as bentonite are already claimed and these claims would need to be honored as valid existing rights.	Alternative C.
Impacts from Fisheries management actions including Special Status Species	Stocking fisheries with certain predatory fish species has the potential of impacting those special status species that are prey to predatory fish or compete for similar resources		Stocking fisheries with certain predatory fish species has the potential of impacting those special status species that are prey to predatory fish or compete for similar resources. This alternative would have the least potential of stocking predatory fish that would	Same as Alternatives A and B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
			affect special status species.	
Impacts from Fire Management and Ecology management actions	Potential for surface-disturbing activities associated with Fire Management and Ecology could impact special status species and their habitat depending on the amount, location, and type of disturbance. Surface-disturbing activities could remove protective vegetative cover and may alter soil properties. This would increase the probability of erosion that would affect water quality. Direct disturbance to wildlife would occur from noise and the presence of people equipment during mechanical or prescribed fire treatments that would be undertaken to reduce pine density or alter vegetative communities. Alterations to vegetative communities in forested areas would result in more forage for the majority of wildlife species as herbaceous and shrubs communities respond positively to the reduction in competition from trees and increased sunlight that reaches understory vegetation. In the short term, hiding and thermal cover would be reduced from treatments. Over the long term, impacts to special status species and water quality would be beneficial as the potential for large, hot, severe wildfires and the resultant major, long-term negative impacts to soil, water quality and vegetation are reduced. Application of forestry and fire BMPs and guidelines would ensure that disturbed sites would revegetate quickly reducing the water quality impacts to short-term impacts. *Specific impacts to soil, water, and vegetation from large scale fires is also discussed in the soil, water, and vegetation sections. Prescribed fire in certain habitats can be beneficial for some special status species.			
Impacts from Cultural Resources management actions	Potential to affect.	Potential restriction to protect cultural resources would provide minor, long-term beneficial impacts to special status species and their habitats.		
Impacts from Paleontological Resources management actions	Potential to affect.	Restriction to protect paleontological resources would result in minor long-term beneficial impacts to wildlife and their habitats.		
Impacts from Visual Resources management actions	This alternative would provide the least level VRM restrictions and would also result in the lowest levels of special status species protection that would occur by limiting development and disturbance through VRM restrictions. 6,224 acres would receive	This alternative would provide more protection for special status species than Alternative A but less than Alternative C. Restriction to protect visual resource values would result in moderate long-term beneficial impacts to wildlife and their habitats. 6,828 acres would receive	This alternative would provide the most protection to special status species by providing the most acres restricted to visual obstructions and development. 190,212 acres would receive moderate restriction through Class II or III restrictions. 80,883 acres would receive minor restriction through	This alternative would provide more protection to wildlife than Alternative B but less than Alternative C by providing acres restricted to visual obstructions and development. 11,911 acres would receive moderate protection through Class II or III restrictions.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	moderate restriction through Class II or III restrictions. 531 acres would receive minor restriction through Class IV restrictions. The rest of the planning area (264,997 acres) would be managed on a case-by-case basis.	moderate restriction through Class II or III restrictions. 264,924 acres would receive minor restriction through Class IV restrictions.	Class IV restrictions.	259,841 acres would receive minor protection through Class IV restrictions.
Resource Uses				
Impacts from Energy and Minerals	Surface-disturbing activities from leasable, locatable, and salable minerals would impact special status species to varying degrees depending on the amount, location, timing, and type of disturbance. The analysis of impacts described below is a summary of impacts for activities that are expected to occur under each alternative for the life of the plan. Surface-disturbing and disruptive activities mainly vary by alternative for oil and gas activities.			
Impacts from Leasable Minerals. Refer to cumulative acres under resource uses for acres affected by stipulations and alternatives.	Alternative A would result in the most development of oil and gas resources. Alternative A provides minimal measures of protection for wildlife.	Alternative B would result in more protective measures for wildlife compared to Alternative A, but less than Alternative C.	Alternative C would provide the greatest protection for wildlife by closing the most acres to leasable minerals. Greater Sage-Grouse PPAs/ACEC would not be managed as NSOs (as in Alternatives B and D) but would be closed to leasing. CSU acres are lower than Alternatives B and D because more acres are managed as NSO.	Alternative B would provide more protection than Alternative B but less than Alternative C.
Impacts from Salable Minerals management actions	The limited level of surface-disturbing saleable minerals activities would not result in major impacts to special status species. If activities reach the upper end of	Same as Alternative A except the abandoned Black Hills Army Depot Site (BHAD) would be closed (12,709 acres).	Same as Alternative B except Greater Sage-Grouse PPAs/ACEC would be closed to salable mineral development.	Same as Alternative B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	projected levels, minor, long-term impacts from surface disturbance would occur. Disturbance from people and equipment would result in minor, short-term impacts to wildlife. Some indirect adverse impacts to special status species could occur from removal of vegetation and sedimentation into water bodies but such impacts would be negligible provided that BMPs and stipulations are followed.		Affected acre include: Surface: 93,266 acres Subsurface: 289,563 acres	
Impacts from Locatable Minerals management actions	Locatable mineral development is not expected to vary by alternative. If activities reach the upper end of projected levels, minor, long-term impacts to special status species would occur from surface disturbance, noise levels, and disturbance from people and equipment. Some adverse impacts to special status species could occur from loss of habitat, disturbance and erosion such as sedimentation or infrequent cases of pollution being released into water bodies but such impacts would be minor provided that acreages are kept minimal, and BMPS and stipulations are followed.		Same as Alternatives A and B except Greater Sage-Grouse PPAs/ACEC would be withdrawn from locatable mineral development. Affected acres include: Surface: 93,266 acres Subsurface: 289,563 acres	Same as Alternatives A and B.
Impacts from Livestock Grazing management actions	Changing fences from woven wire to less restrictive wildlife fence and marking fences would reduce wildlife mortality and facilitate movement of wildlife.			
	Lack of adaptive management measures for increasing or decreasing livestock use would result in less proactive management and decreased benefit to special status species	Adaptive management measures that allow an increase or decrease of livestock grazing based on actual conditions would result in the most flexibility to respond to changing	Lack of adaptive management measures for increasing or decreasing livestock use would result in less proactive management and decreased benefit special status species compared to Alternative B.	Same as Alternative B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	compared to Alternative B. Livestock use levels could still be reduced or increased based on current regulations but such changes would take much longer to implement compared to Alternative B.	conditions.	Livestock use levels could still be reduced or increased based on current regulations but such changes would take much longer to implement compared to Alternative B.	
	Moderate long-term adverse impacts to special status species habitat could occur as there would be less flexibility for management of livestock use before or after prescribed fire.	Adaptive management measures that would allow more flexibility for management of livestock use before and after prescribed fire would benefit special status species.		
Impacts from Recreation/ Visitor Services management actions	Management restrictions of habitat for special status species would cause no inconvenience to recreation users.	Management restrictions of habitat for special status species could cause negligible inconvenience to recreation users.	Management restrictions of habitat for special status species could cause minor inconvenience to recreation users.	
Impacts from Travel Management	Potential for moderate, short- and long-term adverse impacts as travel uses increases over time.	Greater Sage-Grouse and other special status species could be negatively impacted by the use of roads in important special status species habitat. Alternatives B, C, and D would result in more coordinated management of travel through the use of Travel Management Areas (TMAs) and implementation travel management planning. Lower adverse impacts compared to Alternative A. Impacts are expected to be minor, short- and long-term adverse impacts.		
Impacts from Forest and Woodland Products management actions	The potential unrestricted use of snag and cavity bearing trees would have a negative effect on special status species that use this component of habitat.		This alternative would restrict the removal of snag and cavity bearing trees the most, positively benefitting special status species that use this component of habitat.	
	The disturbance from removing forest products would have a short-term negative impact from the displacement of special status and other wildlife	The disturbance from removing forest products would have a short-term negative impact from the displacement of special status and other wildlife species. The long-term increase in forage and browse would be a positive benefit to most species of wildlife. Forest product removal completed to enhance wildlife habitat would be beneficial.		

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	species. The long-term increase in forage and browse would be a positive benefit to most species of wildlife.			
Impacts from Lands and Realty management actions	Most lands and realty actions such as ROWs are surface-disturbing and disruptive activities and would have negative impacts to wildlife to varying degrees depending on the amount, location, timing, and type of disturbance. The impacts described below are for specific realty actions.			
Impacts from Land Tenure management actions	Acquiring more lands that meet the land tenure year adjustment criteria would have a positive benefit special status species and their habitat.			
Impacts from Rights-of-Way Impacts from Leases and Permits management actions	Least protective requirements for placement and application to powerlines and other ROWs would have potential negative impacts. See Table 2-1 "Rights-of-way, Cumulative acres of BLM-Administered Surface Acres Affected" and the Lands section of Table 2-1 and Appendix R.	Less protective requirements including avoidance areas for placement and application to powerlines and other ROWs would have potential negative impacts. See Table 2-1 "Rights-of-way, Cumulative acres of BLM-Administered Surface Acres Affected" and the Lands section of Table 2-1 and Appendix R.	More restrictive requirements including exclusion areas for placement and application to powerlines and other ROWs would have more beneficial impacts on special status species. See Table 2-1 "Rights-of-way, Cumulative acres of BLM-Administered Surface Acres Affected" and the Lands Section of Table 2-2 and Appendix R.	Requirements including exclusion and avoidance areas for placement and application to powerlines and other ROWs would be more restrictive than Alternatives A and B but less than Alternative C which would have more beneficial impacts on special status species than Alternatives A and B but less than Alternative C. See Table 2-1 "Rights-of-way, Cumulative acres of BLM-Administered Surface Acres Affected" and the Lands Section of Table 2-2 and Appendix R.
Impacts from Withdrawal management actions	Mineral withdrawals of 6,894 acres for the ACECs to protect resources and resource extraction could be	Potential withdrawals for facilities such as the national cemetery or national guard facilities would have	Withdrawals of 100,570 acres to protect resources and resource extraction could be beneficial to special status	Potential withdrawals for facilities such as the national cemetery or national guard facilities would have

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	beneficial to special status species.	negative impacts to special status species. Withdrawals of 7,304 acres to protect resources and resource extraction could be beneficial to special status species.	species.	negative impacts to special status species. Withdrawals of 7,304 acres to protect resources and resource extraction could be beneficial to special status species.
Impacts from Transportation Facilities and Access management actions	Potential to affect.	Greater access to public lands would have a greater negative impact on special status species and their habitat. Through increased disturbance, disruption and hunting pressure.	Access could have a negative impact on special status species and their habitat. Through increased disturbance, disruption and hunting pressure.	Access could have a negative impact on special status species and their habitat. Through increased disturbance, disruption and hunting pressure.
Impacts from Renewable Energy management actions	Least protective requirements for renewable energy development would result in adverse impacts to special status species. 267,768 acres (98% of BLM surface acres) in western SD would be open to renewable energy development. 5,522 acres would be renewable energy ROWs exclusion areas.	Compared to Alternatives C and D, less restrictive requirements including avoidance areas for renewable energy development would have adverse impacts to special status species but such impacts would much less than Alternative A. 84,137 acres (308.39% of BLM surface estate in western SD) would be open to renewable energy development.	Compared to the other Alternatives, this Alternative would provide the most restrictive requirements for renewable energy development and largest amount of acres protected through exclusion areas. This Alternative would have the least amount of adverse impacts to special status species. 73,870 acres (27% of BLM surface estate in western SD) would be open to renewable energy development.	Requirements including exclusion and avoidance areas and restrictions for renewable development would reduce adverse impacts to special status species. Overall adverse impacts would be less than Alternatives A and B but more than Alternative C. 75,751 acres (27.7% of BLM surface estate in western SD) would be open to renewable energy development. 78,636 acres would be

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
		189,153 acres would be renewable energy ROWs avoidance areas.	199,420 acres would be renewable energy ROWs exclusions.	renewable energy ROWs avoidance areas. 118,904 acres would be renewable energy ROW exclusion areas.
	Impacts as result of development of renewable energy on BLM-administered surface estate in eastern South Dakota would be negligible as those lands are extremely limited (less than 1% of the planning area) and most surface estate in eastern South Dakota is under the reservoirs of the Missouri River or on islands of the Missouri River.			
Impacts from Areas of Critical Environmental Concern designations	ACECs are establish to protect certain values and in protecting these values most of the time we restrict certain uses and these restriction can be beneficial to special status species. Listed below are impacts associated with individual ACECs.			
Impacts from Fort Meade ACEC designation	Many lands and realty actions are limited or restricted within the 6,574 acre ACEC under all Alternatives.	Many lands and realty actions are limited or restricted within the 6,574 acre ACEC. Alternatives B and D would result in a loss of up to 220 acres of wildlife habitat as some land would be transferred out of BLM management.	Impacts would be similar to Alternative A.	Same as Alternative B.
Impacts from Fossil Cycad ACEC designation	Many lands and realty actions are limited or restricted within the 313 acre ACEC and would have greater beneficial impacts for wildlife.			
Impacts from of Greater Sage-Grouse PPAs ACEC designation	No designation. No impact.	No designation. No impact.	ACEC designation would limit development to some degree but ACEC would be ROW avoidance area regardless of ACEC designation.	No designation. No impact.
Impacts from National Historic Trails	Increased use of these trails could cause disruption and displacement of special status species.			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts to Fish and Aquatics FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Climate	Potential changes in climate that would affect temperature and precipitation would affect fish and aquatic species and their habitat.			
Impacts from Soil Resources management actions	Restrictions to sensitive soils would benefit fish and aquatic habitat by diminishing the potential soil erosion.			
Impacts from Water Resources management actions	Potential to affect.	Developing more water sources would potentially increase habitat for certain fish and aquatic species.		
Impacts from Vegetative Communities management actions	Surface-disturbing activities and actions in vegetative communities would impact fish and aquatic habitats depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion. Areas would need to be reclaimed within recommend native species.			
Impacts from Forests and Woodlands management actions	Maintaining healthy forest and woodlands would potentially benefit water quality which would affect fish and aquatic species.			
Impacts from Rangeland management actions	Rangelands meeting standards would be beneficial by reducing sedimentation which would affect fish and aquatic species.			
Impacts from Riparian and Wetlands management actions	Riparian and wetlands that are meeting PFC would be beneficial to fish and aquatic species and their habitats by having less streamside degradation.			
Impacts from Noxious and Invasive	Utilizing IPM methods for invasive species would help limit the negative impacts, but total eradication of them is not possible, to fish and aquatic species and their habitats			
Impacts from Special Status Plants management actions	Potential to affect.			
Impacts from Wildlife including Special Status Species management actions	Negligible impacts.	Protection of wildlife habitats could potentially maintain or improve water quality improving fish and aquatic species habitat.		
Impacts from Fisheries including Special Status	Developing fisheries with certain predatory fish species has the potential of impacting the other aquatic species.			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Species management actions				
Impacts from Fire Management and Ecology management actions	Potential for surface-disturbing activities associated with Fire Management and Ecology could impact fish and aquatic habitat and species depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion that would affect water quality.			
Impacts from Cultural Resources management actions	Potential to affect.	Restrictions to protect cultural resources could affect the placement of new reservoirs for increased fishery opportunities.		
Impacts from Paleontological Resources management actions	Potential to affect.	Restriction to protect paleontological could affect the placement of new reservoirs for increased fishery opportunities.		
Impacts from Visual Resources management actions	Potential to affect.	Visual resource class II could affect the placement of new reservoirs for increased fishery opportunities.		
Impacts from Lands with Wilderness Characteristics	None Present			
Resource Uses				
Energy and Minerals				
Impacts from Leasable Minerals management actions	Potential for surface-disturbing activities associated with leasable minerals could impact fish and aquatic habitat and species depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion that would affect water quality.			
Impacts from Salable Minerals	Potential for surface-disturbing activities associated with saleable minerals could impact fish and aquatic habitat and species depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion that that would affect water quality.			
Impacts from Locatable Minerals management actions	Moderate potential for surface-disturbing activities associated with locatable minerals could impact fish and aquatic habitat and species depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion that that would affect water quality.			
Impacts from Livestock Grazing management actions	Livestock grazing that allow riparian and rangelands to meet standards would positively affect water quality which would affect fish and aquatic species.			
Impacts from Recreation/Visitor Services	Little impact	Impact from recreational users of fisheries is the potential to overharvest a fishery.		

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
management actions				
Impacts from Travel Management actions	Most potential for adverse impacts from leaving all existing roads and trails.	Less potential for adverse impacts as some roads and trails would be closed.	Lowest potential for adverse impacts by closing some roads and trails.	
Impacts from Forest and Woodland Products management actions	Potential for surface-disturbing activities associated with removal of forest and woodland products could impact fish and aquatic habitat and species depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion that that would affect water quality. Forest BMP should reduce the amount of erosion.			
Impacts from Lands and Realty management actions	Most lands and realty actions such as ROWs are surface-disturbing and disruptive activities and would have negative impacts to fisheries and aquatic species to varying degrees depending on the amount, location, timing, and type of disturbance. The impacts described below are for specific realty actions.			
Impacts from Land Tenure management actions	Potential to acquire lands that would have existing structures or structures that could be developed.			
Impacts from Rights-of-Way management actions	Potential for surface-disturbing activities associated with rights-of-way could impact fish and aquatic habitat and species depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion that that would affect water quality.			
	Most potential for impacts when rights-of-way are not prohibited within ¼ mile of designated fisheries.	Less potential for impacts when rights-of-way are prohibited within ¼ mile of reservoirs with fish.		
Impacts from Leases and Permits management actions	Low potential for impacts.			
Impacts from Withdrawals	Withdrawals to protect resources and resource extraction could be beneficial to fisheries and aquatic species.			
Impacts from Transportation Facilities and Access management actions	Potential for surface-disturbing activities associated with transportation facilities and access could impact fish and aquatic habitat and species depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion that that would affect water quality.			
Impacts from Renewable Energy management actions	Potential for surface-disturbing activities associated with renewable energy could impact fish and aquatic habitat and species depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion that that would affect water quality.			
	Most potential for impacts when renewable energy is	Less potential for impacts when renewable energy is prohibited within ¼ mile of reservoirs with fish.		

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	not prohibited within ¼ mile of designated fisheries.			
Special Designations				
Impacts from Areas of Critical Environmental Concern designation				
Impacts from Fort Meade ACEC designation	ACECs are established to protect certain values and in protecting these values most of the time we restrict certain uses and these restrictions can be beneficial to fish and aquatic species and their habitats. Listed below are impacts associated with individual ACECs.			
Impacts from Fossil Cycad ACEC designation	No impact			
Impacts from Greater Sage-Grouse PPAs ACEC designation	No ACEC proposed. No Impact.	No ACEC proposed. No Impact.	Little additional benefit from ACEC designation.	No ACEC proposed. No Impact.
Impacts to Cultural Resources FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Vegetative Communities management actions	Provides no protection to cultural resources from indigenous plant gathering areas.	Provides moderate protection to cultural resources by designating plant gathering areas and with the restriction to above ground plant gathering only in the Fossil Cycad ACEC.	Provides less protection of cultural resources than Alternative B, more than Alternative A, with restriction to above ground plant gathering only in the Fossil Cycad ACEC.	Provides most protection to high value cultural resources with restriction to above ground plant gathering in the Fort Meade and Fossil Cycad ACEC. Also allows for restrictions in potentially affected areas if needed.
Impacts from Fire Management and Ecology management actions	Forestry and vegetation product management activities would reduce hazardous fuels and the risk of intense, destructive wild fires that can have an adverse effect on cultural resources. Alternative A provides less protection to cultural	Provides the most protection to cultural resources based on amount of planned fuels treatments.	Provides less protection to cultural resources than Alternatives B and D, more than A, based on amount of treatments planned.	Same as Alternative B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	resources than Alternatives B, C, and D because the least amount of fuels treatments are proposed.			
Impacts from Forests and Woodlands management actions	Provides less protection to cultural resources than Alternative C, more than Alternative B, based on amount of mechanical treatments and minimal new road construction.	Provides less protection to cultural resources than Alternatives A and C same as D, based on amount of mechanical vegetation treatments, and new road construction. There is a potential for indirect or inadvertent affects from the increased access to cultural sites by vandals.	Provides the most protection to cultural resources because mechanical vegetation treatments would be moderately less than Alternatives A, B and D, and it has the most restriction for new road construction and road reroutes.	Same as Alternative B.
Impacts from Riparian and Wetlands management actions	Achieving the goals for Vegetation: Riparian/Wetlands would be positive for cultural resources. Protection of cultural resources that occur in these environments increases proportionally with the increase in the percent improvement towards PFC of riparian/wetland habitats.			
Impacts from Noxious and Invasive management actions	Treatment of noxious and invasive species would increase natural cover allowing for better erosion control on cultural resource sites and enhance experience at Traditional Cultural Properties (TCPs).			
Impacts from Fire Management and Ecology	Provides the most protection for cultural resources because use and movement of heavy equipment (earth moving/tillage equipment) for fire suppression activities is the most restricted.	Provides less protection for cultural resources because heavy equipment would be allowed off roads and trails except where prohibited. Affects to cultural resources would be negligible based on consultation of identified cultural areas before use of or anticipated use of heavy equipment and avoidance of protected resource areas.		
Impacts from Cultural Resources management actions	Provides adequate protection for cultural resources through the National Historic Preservation Act, Section 106 process.	Inventory of 100 acres of Section 110 survey per year to increase knowledge of cultural resources in need of protection , provides more protection to cultural	Inventory of 400 acres of Section 110 survey per year, to increase knowledge of cultural resources in need of protection, would provide the most protection to cultural resources.	

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
		resources through pro-active management than Alternative A, less than Alternatives C and D.		
	Provides adequate protection to high value Cultural Resources inside the Fort Meade National Register (NR) Site boundary that is 3,200 acres presently. The BLM is required to do formal consultation with the State Historic Preservation Office and Advisory Council on projects planned inside the 3,200 acres. Major undertakings inside this boundary may require programmatic agreements.	Provides the most protection to cultural resources through a National Designation, allowing opportunities for cooperative agreements and preservation grants. Change would also result in additional protection for 3,370 acres in the Historic Military Boundary that are outside the present (NR) boundary. Additional time for formal consultation on major undertaking on the additional 3,370 acres will be necessary. Would result in more time for consultation than Alternatives A and C.	To incorporate the additional 3,370 acres of Historic Military Reservation into the NR Site boundary provides better protection to cultural resources than Alternative A. This would result in additional time for formal consultation on major undertaking on the additional 3,370 acres.	Same as Alternative B.
Impacts from Visual Resources management actions	This alternative has the lowest number of acres managed at Class II and Class III (6,224 acres), causing less benefit to traditional cultural properties, which often incorporate the quality of the view shed for traditional values.	Increasing the Class II and Class III acreages (6,828 acres) improves the visual quality of traditional cultural properties in those view sheds.	Most beneficial to traditional cultural properties by providing the greatest number of acres (190,869 acres) managed under Class II and III.	Class II and Class III acreages are 11,911, allows better protection to cultural resources than alternatives A and B, less than Alternative C.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Resource Uses				
Impacts from Energy and Minerals management actions	Provides the least protection to cultural resources. Potential impacts would be greatest due to the expectation of the most development.	Moderate amount of development anticipated. Adequate protection of cultural resources through the NHPA Section 106.	Provides more protection to cultural resource than Alternatives A and B, less than Alternative D.	Provides more protection to cultural resources than Alternatives A, B, and C.
Impacts from Leasable Minerals management actions	Lowest level of overall protection to cultural resources due to the fewest restrictions on leasing. There are (6,894) acres closed at the Fort Meade and Fossil Cycad ACECs and (87,349) acres of NSO.	Provides fewer acres closed (6,574) to leasing than Alternatives A, C, and D and provides higher levels of protection than Alternative A with protective lease stipulations for (404,306) acres of NSO that includes the Fossil Cycad ACEC and under Bear Butte National Historic Landmark (Appendix E.5 and E.7).	Provides the most protection to cultural resources by closing 7,304 acres in the Fort Meade and Fossil Cycad ACECs, 12,709 subsurface acres in the BHAD, and 410 subsurface acres under Bear Butte National Historic Landmark as well as an additional 100,160 acres of surface estate and 309,576 subsurface acres in Greater Sage-Grouse PPAs/ACEC.	Provides 7,304 acres closed to leasing and provides 406,005 acres of NSO, more than the other Alternatives.
	Bear Butte National Historic Landmark has no restrictions on the 410 acres of minerals beneath it. This alternative offers the least protection to cultural resources.	The 410 acres of minerals beneath Bear Butte would be open to leasing with an NSO restriction, offering better protection than Alternative A, less than Alternatives C and D.	The 410 acres of minerals beneath Bear Butte would be closed, offering the best protection.	
Impacts from Locatable Minerals management actions Impacts from Salable	Provides the least protection to cultural resources based on the lowest number of restricted acres for withdrawal from	Provides the same protection to cultural resources as Alternative A, less than Alternatives C and D, as it only withdraws the Fort	Provides the most protection to cultural resources by providing the highest number of restricted acres. Restricted acres for withdrawal from	Provides better protection to cultural resources than Alternatives A and B, less than Alternative C. It provides the (7,304)

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Minerals management actions	consideration for mineral leasing.	Meade and Fossil Cycad ACECs, 6,894 acres.	consideration for mineral leasing and closure to the mining law, in the Fort Meade and Fossil Cycad ACECs (6,894 acres) and the 410 acres of Federal minerals beneath Bear Butte National Historic Landmark, along with all Greater Sage-Grouse PPAs.	restricted acres for withdrawal from consideration for mineral leasing and closure to the mining law, in the Fort Meade and Fossil Cycad ACECs and Bear Butte National Historic Landmark.
	Bear Butte National Historic Landmark has no restrictions on the 410 acres of minerals beneath it. This alternative offers the least protection to cultural resources.	The 410 acres of minerals beneath Bear Butte would be closed, offering the best protection.		
	Black Hills Army Depot near Igloo, South Dakota, has no restrictions. This alternative offers the least protection to cultural resources.	No Surface Occupancy to leasable minerals and closed to salable minerals in the Black Hills Army Depot (12,709 subsurface acres) would benefit the protection of cultural resources.	Closing the Black Hills Army Depot (12,709 subsurface acres) to leasable and salable minerals would benefit the protection of cultural resources the most under Alternative C.	Same as Alternative B.
Impacts from Livestock Grazing management actions	While direct impacts associated with range improvement projects would be mitigated, other impacts may occur as a result of livestock grazing activities. Livestock congregation and trailing at or across cultural resource site locations can damage artifacts and the contexts in which they occur. Cattle shading and rubbing can damage standing historic structures and prehistoric pictograph panels. Trampling at spring sources and along stream banks, cattle trailing, and overgrazing can all lead to a denuding of protective vegetation cover and create indirect impacts to cultural resources by accelerating natural erosion and exposing artifacts to illegal collection and vandalism. Grazing management which meets established Standards for Rangeland Health and Guidelines for Livestock Grazing would reduce the amount and extent of impacts or damage to cultural resources resulting from grazing on public lands.			
	Provides fewer acres grazed in the Exemption area. Impacts would be less than	Larger number of cultural resource sites would be vulnerable to adverse effects	Provides the most protection to cultural resources because it has a lower number of	Larger number of cultural resource sites would be vulnerable to adverse effects

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	Alternative B and D but higher than Alternative D.	due to increased grazing in the exemption area.	grazing acres proposed and no new allotments in ungrazed areas.	due to increased grazing in the exemption area.
Impacts from Recreation/Visitor Services management actions	Provides the least protection to cultural resources as there would be opportunity for Geocaching to be placed in high value cultural sites.		Provides the most protection to cultural resources as Geocaching is restricted in historic features, artifacts and structures.	
Impacts from Travel Management actions	Provides adequate protection to cultural resources because roads would be constructed to the minimum standard, unless otherwise needed.	The potential to damage cultural resources is highest as new permanent road building promotes direct and indirect effects to cultural resources.	Provides the most protection to cultural resources since no new permanent road building or rerouting of existing roads is allowed, unless required by law.	Same as Alternative B
	Provides the least protection to cultural resources because there are no restrictions to non-motorized.	Provides more protection to cultural resources than Alternative A, with a restriction of non-motorized for the Fossil Cycad ACEC 320 acres.	Provides the most protection to cultural resources with the designation of 184,354 acres Semi-primitive non-motorized travel and only 80,665 acres of Semi-primitive motorized.	Provides more protection to cultural resources than Alternative A, with a restriction of non-motorized for the Fossil Cycad ACEC 320 acres. Provides less protection than Alternative C since no acres are designated as non-motorized.
	Provides less protection to cultural resources than Alternatives C and D, more than Alternative B since wheeled cross country travel is restricted for game retrieval; however, travel is allowed for camping up to 300 feet from a road.	The potential to damage cultural resources is highest since wheeled cross country travel is allowed up to 300 feet from a road for big game retrieval and camping.	Provides the most protection to cultural resources since wheeled cross country travel is prohibited for game retrieval and travel allowed for camping is less, only within 100 feet from a road.	
Impacts from Lands and Realty management actions	Provides adequate protection of cultural resources with	Provides the most protection for cultural resources since	Provides the least protection to cultural resources since	Provides the most protection for cultural resources since

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	allowing for overhead transmission lines, fiber optic, telephone, and other lines, effects would be minimal for ground disturbance and greater for visual effects to cultural view sheds.	only lines that can be safely buried would be buried providing better cultural view shed opportunities and only negligible effects from ground disturbance.	burying all utility lines may result in more linear feet of ground disturbance than constructing overhead with poles and lines.	only lines that can be safely buried would be buried providing better cultural view shed opportunities and only negligible effects from ground disturbance.
Impacts from Land Tenure management actions	Provides adequate protection of cultural resources through case-by-case basis of consideration for land retention, acquisition, and disposal.	Provides the most protection to cultural resources for retention of lands with high cultural resource values and with consideration for acquisition of land adjacent or near Fort Meade ACEC.		
Impacts from Rights-of-Way management actions	Provides the least protection to cultural resource s with no ROW exclusion areas and allowing power lines to be buried within the Fort Meade ACEC.	Designating all of the Fort Meade Recreation ACEC as a ROW exclusion area except for Hooper Dairy Road, all other valid existing rights and corridors and confining power lines to designated corridors only, would offer the most protection of cultural resources from adverse effects.		
Impacts from Land Tenure Transfers management actions	A public land transfer of up to 220 acres to the National Guard and to the Veterans Administration would not result in effects to the Fort Meade National Historic District Site. The potential transfers are considered an administrative action. The Veterans Administration and Department of Defense are federal agencies under the same regulations (NHPA), as BLM.		No land transfer proposed and therefore no potential impact.	A public land transfer of up to 220 acres to the National Guard and to the Veterans Administration would not result in effects to the Fort Meade National Historic District Site. The potential transfers are considered an administrative action. The Veterans Administration and Department of Defense are federal agencies under the same regulations (NHPA) as BLM.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Withdrawals	Provides less protection to cultural resources because there are 410 acres of federal minerals available for development beneath Bear Butte National Landmark and Traditional Cultural Property.		Allows the most benefit to Traditional Cultural Properties and the National Landmark Site at Bear Butte with total withdrawal of 410 acres of federal minerals.	
Impacts from Renewable Energy management actions	Development of energy resources would affect cultural resources with direct effects from road construction, use, and maintenance, facility development (i.e. Wind Towers, Solar Panels, Biomass); visual quality impacts and noise increases to Traditional Cultural Properties; fragmentation to Cultural Landscapes and Districts. Provides the least protection to cultural resources because potential impacts would be greatest due to the expectation of the most development and least restrictions.	Provides more protection to cultural resources than Alternative A less than Alternatives C and D based on restrictions.	Provides the most protection to cultural resources with the highest number of acres of surface restrictions.	Moderate amount of development anticipated. Provides more protection to cultural resource than Alternative A, and B less than Alternative C.
Special Designations				
Areas of Critical Environmental Concern				
Impacts from Fort Meade ACEC designation	Present National Register of Historic Places District Boundary for Fort Meade includes 3,200 acres.	Upgrade formal nomination of Fort Meade as a National Historic Landmark for a National Register Landmark listing of 6,570 acres. Potential for higher visitor	The National Register of Historic Places Fort Meade District would incorporate a nomination addition of 3,370 acres. Total acres in Historic District would be changed to	The current National Register of Historic Places would be revised to include a nomination for the National Historic Landmark to incorporate, approximately

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
		use compared to Alternatives A or C.	6,570.	3,370 additional acres. Potential for higher visitor use compared to Alternatives A or C.
Impacts from Fossil Cycad ACEC designation	The continued designation of the Fossil Cycad ACEC affords the best protection to the cultural and paleontological values.			
Impacts from Sage-Grouse ACEC designation	No ACEC proposed. No Impact.	No ACEC proposed. No Impact.	Some minor long term additional benefits to cultural resources within the ACEC.	No ACEC proposed. No Impact.
Impacts from National Historic Trails	Lewis and Clark National Historic Trail is located inside the Missouri River Corridor and would be afforded the same protection under all the alternatives based on Section 106 of the NHPA, consultation with the SHPO, Interested Tribes, and the Advisory Council for any potential affects.			
Impacts to Paleontological Resources FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Under the Potential Fossil Yield Classification (PFYC) system, geologic units are classified based on the relative abundance of vertebrate fossils or uncommon invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential. The classification system is intended to provide baseline guidance to assessing and mitigating impacts to paleontological resources. Acres of Potential Fossil Yield Classes Class 1: 2,145 Acres Class 2: 3,885 Acres Class 3: 221,285 Acres Class 4: 4,370 Acres Class 5: 41,500 Acres				
Impacts from Paleontological Resources management actions	This alternative has the lowest number of acres considered for Paleontological Survey and therefore would not offer much opportunity for	Increasing Paleontological Survey would allow better opportunities of finding previously unknown locations of paleontological resources. Alternative B	This Alternative is the most beneficial to paleontological resources because it provides the largest number of acres for Paleontological Surveys and resource Monitoring based on	More protective of paleontological resources because it promotes pro-active field surveys in known potential fossil yield areas and in a sample of unknown

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	additional paleontological resource finds and protection of the resource.	includes survey of more acres than Alternative A, less than Alternative C.	survey finds. (This provides the best opportunity for finding previously unknown resources.	areas to determine if they have potential to bear important fossil finds. On site spot checking during project construction in areas conducive to important fossil finds would allow for a greater protection measure of the resource.
Impacts from Vegetative Communities management actions	Provides no protection to paleontological resources for unrestricted plant gathering.	Provides the most protection to paleontological resources based on a restriction of incidental plant gathering to above ground limits inside the Fossil Cycad ACEC.		
Impacts from Riparian and Wetlands management actions	Achieving the goals for Vegetation: Riparian/Wetlands would be positive for paleontological resources. Protection of paleontology resources that occur in these environments increases proportionally with the increase in the percent improvement towards PFC of riparian/wetland habitats.			
Impacts from Visual Resources management actions	Provides least protection of paleontological resources.	Provides more protection to the paleontological resources with the designation of VRM Class 2 (promotes more ground surface restrictions) in the Fossil Cycad ACEC.		
Impacts from Lands with Wilderness Characteristics management actions	None Present			
Resource Uses				
Impacts from Energy and Minerals management actions	Provides least protection of paleontological resources because restrictions are significantly less than other Alternatives.	Provides moderate protection to paleontological resources because potential impacts would be greatest due to the expectation of the most development and less restrictions than Alternatives C and D.	Moderate amount of development anticipated with more surface restrictions. Provides more protection to paleontological resources than Alternatives A, B and D, less than Alternative A.	Moderate amount of development anticipated with the most surface restrictions. Provides the most protection to paleontological resources of all the alternatives.
Impacts from Leasable Minerals management actions	Provides the least protection of Paleontological resources through a No Surface	Provides protection to paleontological resources with a No Surface	Provides the most protection through closure of the entire Fossil Cycad ACEC. Closure	Provides protection of Paleontological resources through a closure of leasable

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	Occupancy for known paleontological sites inside the Fossil Cycad ACEC.	Occupancy for the entire Fossil Cycad ACEC.	of leasable mineral development in the Greater Sage-Grouse PPAs would result in a beneficial impact to paleontological sites especially in the higher levels of fossil classification areas in the portions of the PPAs that extend into Harding County.	minerals in the Fossil Cycad ACEC.
Impacts from Salable Minerals management actions Impacts from Locatable Minerals management actions Impacts from Geothermal management actions	Provides the least protection to Paleontological resources based on the lowest number of restricted acres for withdrawal of these minerals.	Provides protection to Paleontological resources by recommending that these mineral be withdrawn in the entire Fossil Cycad ACEC.	Provides the most protection through a recommended withdrawal of these minerals in the entire Fossil Cycad ACEC and withdrawal of these mineral in the Greater Sage-Grouse PPAs. Withdrawal of these minerals would result in improved protection of paleontological sites on BLM especially in the higher levels of fossil yield areas in the portions of the PPAs that extend into Harding County (NW SD). Refer to Maps 2-5 and 2-7.	Provides the same level of protection as Alternative B by recommending withdrawal of these minerals in the Fossil Cycad ACEC.
Impacts from Livestock Grazing management actions	Overgrazing can all lead to a denuding of protective vegetation cover and create indirect impacts to paleontological resources by accelerating natural erosion and exposing fossils to illegal collection and vandalism. Grazing management which meets established Standards for Rangeland Health and Guidelines for Livestock Grazing would reduce the amount and extent of impacts or damage to paleontological resources resulting from grazing on public lands.			
Impacts from Travel Management actions	Provides the least protection to paleontological resources because there are no restrictions to non-motorized and no restriction in the	Provides more protection to paleontological resources than Alternative A, with a restriction of non-motorized for the Fossil Cycad ACEC	Provides the most protection to paleontological resources with the designation of 184,354 acres Semi-primitive non-motorized travel and only	Provides more protection to paleontological resources than Alternative A, with a restriction of non-motorized for the Fossil Cycad ACEC

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	Fossil Cycad ACEC.	320 acres.	80,665 acres of Semi-primitive motorized.	320 acres. Provides less protection than Alternative C since no acres are designated as non-motorized.
	Provides moderate protection to paleontological resources because off-road motorized game retrieval is restricted. However, motorized access of camp sites to 300 feet off road is allowed.	Provides the least protection to paleontological resources because off-road motorized game retrieval and motorized off road access to camp sites is allowed to 300 feet.	Provides the most protection to paleontological resources because it restricts motorized game retrieval and limits motorized access of camp sites to 100 feet off road.	
Impacts from Forest and Wood Products management actions	Forest product removal is prohibited in the Fossil Cycad ACEC providing the most protection of paleontological resources in the ACEC.		Forest Product removal is allowed throughout the entire planning area unless restricted provides the least amount of protection of paleontological resources in the Fossil Cycad ACEC.	Forest product sale is prohibited in the Fossil Cycad ACEC providing more protection of paleontological resources in the ACEC than Alternative C, less than Alternatives A and B.
Lands and Realty Impacts from Land Tenure management actions	Provides less protection of significant paleontological resources with no consideration of land retention in Fossil Cycad ACEC.	Provides land retention for the Fossil Cycad ACEC offering the most protection of significant paleontological resources.		
Impacts from Right-of-Way management actions	Provides the least protection for paleontological resources.	Provides the most protection to paleontological resources with an exclusion area in the Fossil Cycad ACEC.		
Impacts from Renewable Energy management actions	Provides the least protection for paleontological resources with no restrictions for Fossil Cycad ACEC.	Alternative B provides the most protection for significant paleontological resources with a restriction for all renewable energy development inside the Fossil	Alternatives C and D have more surface-disturbing restrictions; however, they do not offer as much protection to significant paleontological resources inside the Fossil Cycad ACEC (only restrict commercial renewable energy development projects).	

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
		Cycad ACEC. It also offers a moderate amount of surface-disturbing restrictions but less than Alternatives C and D. Alternative B is more protective than Alternative A, less than Alternatives C and D.	With the restriction of commercial renewable energy development and the amount of restrictions Alternatives D offers the best protection.	
Special Designations				
Areas of Critical Environmental Concern				
Impacts from Fossil Cycad ACEC designation	The designation of the Fossil Cycad ACEC affords the best protection to the paleontological values. The Fossil Cycad ACEC is a right-of-way exclusion area and has restrictions for Oil & Gas and Renewable Energy.			
Impacts from Fort Meade ACEC designation	The Fort Meade ACEC contains many restrictions to protect significant cultural resources that would inadvertently offer the best protection for paleontological resources with less surface-disturbing activities.			
Impacts from Greater Sage-Grouse PPAs ACEC designation	No designation. No impact.		Designation would have little impact.	No designation. No impact.
Impacts to Visual Resources FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Fire Management and Ecology management actions	Wildfire has the potential for major modification to the landscape, from the fire itself and from suppression activities. All alternatives provide for full suppression strategies.			
Impacts from Fuels Treatments	Impacts from wildfire would be greatest in this Alternative, assuming that the fewer acres treated would inversely affect wildfire severity and acres.	Less risk than Alternative A or Alternative C for wildfire due to more acres of treatment. Treatments are designed to reduce fire severity (thus reducing the term of impacts). Treatments are also designed to improve	Impacts would be slightly higher than Alternative B, but similar to Alternative A, due to the acres treated.	Same as Alternative B - Less risk than Alternative A or Alternative C for wildfire due to more acres of treatment. Treatments are designed to reduce fire severity (thus reducing the term of impacts). Treatments

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
		ease of suppression and limiting wildfire acres, so there would be fewer acres and less severe wildfire impact.		are also designed to improve ease of suppression and limiting wildfire acres, so there would be fewer acres and less severe wildfire impact.
Impacts from Visual Resources management actions	Retention of existing VRM class designation would provide some direction for management of the visual resources. The Fossil Cycad ACEC would retain the Class IV designation, allowing major modifications. Only portions of the Fort Meade ACEC would have specific VRM direction. Visual Resource management on the rest of the planning area would be on a case by case basis and has the potential for major modifications to the landscape.	Designation of VRM classes would provide a system for managing visual resources. The Fossil Cycad ACEC would be designated the more protective Class II. The Fort Meade ACEC VRM designations would be completed with additional Class III. The rest of the planning area could have major modifications to the landscape, including the proposed SRMA in the Exemption Area.	Designation of VRM classes would provide a system for managing visual resources. The Fossil Cycad ACEC, Fort Meade ACEC (except for Recreation Development Zones, which would retain Class IV designation), and other areas in the planning area that were inventoried Class II would be designated Class II, providing for minor changes. Most of the planning area would be designated Class III, providing for moderate change. Major changes to the landscape would be possible under Class IV on approximately 80,000 acres.	Designation of VRM classes would provide a system for managing visual resources. The Fossil Cycad ACEC would be designated the more protective Class II. The Fort Meade ACEC would have designation completed by designating Class III on the undesignated portion. The Exemption Area (SRMA) would be designated Class III. The rest of the planning area could have major modifications to the landscape.

Inventory Acres	***VRM Class***	***VRM Acres***
313	I	0
6,060	II	1,231
5,284	III	4,993
260,095	IV	531
	0 (No Designation)	264,997

VRM Class	***Acres***
I	0
II	1,544
III	5,284
IV	264,924
0 (No Designation)	0

VRM Class	***Acres***
I	0
II	11,657
III	179,212
IV	80,883
0 (No Designation)	0

VRM Class	***Acres***
I	0
II	1,544
III	10,367
IV	259,841
0 (No Designation)	0

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Resource Uses				
Impacts from Energy and Minerals management actions	Potential impacts from oil and gas leasing could be major changes in the characteristic landscape. Surface Occupancy and Use is only prohibited within developed recreation sites and sites receiving concentrated public use. Visual resource considerations are on a case-by-case basis. Short-term impacts from salable minerals would continue until vegetation and excavation are reclaimed.	Potential visual impacts from oil and gas leasing would be slightly decreased compared to Alternative A, since occupancy and use are prohibited within ½ mile of SRMAs (Exemption Area and Fort Meade ACEC). Designation of VRM class provides a system to manage the changes to the characteristic landscape.	Impacts to the visual resources are likely to be the least. Nearly 12,000 acres would be managed with VRM Class 2, allowing only minor changes to the characteristic landscape. For developed recreation, the prohibited occupancy and use distance is increased to 1 mile from SRMAs, but only 1 SRMA is designated. Short-term impacts from salable minerals would be the same as Alternative A.	Potential visual impacts from oil and gas leasing would be slightly decreased compared to Alternative A, since occupancy and use are prohibited within ½ mile of SRMAs (Exemption Area and Fort Meade ACEC). Designation of VRM class provides a system to manage the changes to the characteristic landscape.
Impacts from Livestock Grazing management actions	Minor potential to impact visual resources (changes in line and color) from livestock grazing and related activities. No consideration for visual resources is currently formally required on fence or water developments.	Slightly higher potential impacts from grazing and its associated activities than Alternative A, due to a higher AUM level allowed. However, VRM would be formally considered for all activities.	Same as Alternative A.	Slightly higher potential impacts from grazing and its associated activities than Alternative A, due to a higher AUM level allowed. However, VRM would be formally considered for all activities
Recreation/Visitor Services				
Impacts from Fort Meade ACEC designation	Current VRM class designations on the Fort Meade ACEC allow varying levels of modification to the characteristic landscape, allowing various recreation opportunities and services. Undesignated areas have no	Completion of VRM designation affords protection to the visual resources on the whole Fort Meade ACEC; level of protection would still vary by designation.	Recreation based development such as trails and interpretative sites would be more difficult to fit into the low modification VRM Class II designation in Fort Meade ACEC. Opportunities for increasing or improving	Impacts same as Alternative B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	formal protection for visual resources.		visitor services would be least in this alternative.	
Impacts from Exemption Area VRM management actions	Lack of VRM designation provides no formal protection for visual resources.	Recreation–related development in the Exemption Area SRMA may impact visual resources; however the designation of VRM Class IV in this area would allow major modifications.	Designation of VRM Class II in some of the Exemption Area would protect visual resources allowing only minor modifications to the characteristic landscape.	Recreation–related development in the Exemption Area SRMA may impact visual resources; however the designation of VRM Class III in this area would allow moderate modifications, including recreation development.
Impacts from Recreation Setting Characteristics	Does not establish RSC and would therefore be least protective of visual resources of all alternatives.	More protection for visual resources than Alternative A, due to the designation of 261,325 acres as Middle Country, 11,655 acres designated as Front Country, and 313 acres as Back Country.	Greatest protections for visual resources of all alternatives since the highest acreages (178,163 acres) are managed for Back Country characteristics.	Same as Alternative B.
Impacts from Travel management actions	Highest potential for impacts to visual resources as impacts are evaluated on a project level basis, without an overall strategy. Motorized travel is limited to existing roads and trails on 95% of the planning area, and limited to designated roads and trails on 5%.	More protection for visual resources than Alternative A, due to the designation of 259,936 acres as semi-primitive motorized, and 11,817 acres designated as Roaded Natural. Motorized travel is limited to existing roads and trails on 95% of the planning acres, and to designated roads and trails on 5%. Motorized access for game retrieval has potential to adversely affect visual resources.	Greatest protections for visual resources of all alternatives since the highest acreages (184,354 acres) are managed as semi-primitive non-motorized. In addition, no new road construction is allowed for forest product removal. Motorized travel is limited to existing roads and trails on 53% (143,224) acres, and limited to designated roads and trails on 47% (128,224 acres).	Same as Alternative B.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Impacts from Forest and Woodland Products management actions	Low potential to impact visual resources from harvesting activities. Highest potential for impacts from timber salvage given least restrictions imposed.	Same impacts from harvesting forest products as Alternative A. Slightly lower potential to impact visual resources from timber salvage.	Lowest potential to impact visual resources from timber harvesting as harvesting is estimated to be slightly lower than Alternatives A or B. Potential timber salvage impacts would be lowest due to more restrictions.	Same impacts from harvesting forest products as Alternative A. Slightly lower potential to impact visual resources from timber salvage.
Impacts from Lands and Realty management actions				
Impacts from Land Tenure management actions	Land transfers that consolidate BLM surface acres improve the ability of the BLM to manage the visual resources.			
Impacts from Rights-of-Way management actions	Burial of utility lines is not addressed in the planning area, but may be required in Fort Meade ACEC.	Burial of utility lines helps retain the visual characteristics once the soil disturbance heals over. Line burial is required only where it would have the least impact on all resources.	Burial of utility lines helps retain the visual characteristics once the soil disturbance heals over. Line burial is required in all cases.	Burial of utility lines helps retain the visual characteristics once the soil disturbance heals over. Line burial is required only where it would have the least impact on all resources.
Special Designations				
Areas of Critical Environmental Concern				
Impacts from Fort Meade ACEC designation	Uncompleted designation of VRM class affords little protection to the ACEC.	Completion of VRM classification provides direction for visual resource management across the ACEC. Provides for a variety of classes to meet management objectives.	Designation of ACEC as VRM Class II protects the visual resource, but may limit management options in treatment types, return of fair market value, and interpretation opportunities.	Impacts same as Alternative B
Impacts from Fort Meade ACEC designation	Transfer of BLM-administered public land for the proposed Black Hills National Cemetery expansion would be less likely as such transfer would need to	Transfer and development of up to 170 acres of BLM-administered public land to the Veterans Administration for expansion of the Black Hills National Cemetery may	No transfer of BLM-administered public land for the proposed Black Hills National Cemetery expansion would maintain 100 acres of BLM-administered public	Same as Alternative B.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	consider ACEC goals and direction, including Visual Resource objectives.	create visual contrasts that are inconsistent with VRM objectives.	land including administration of the visual resource objectives.	
Impacts from Fort Meade ACEC	Transfer of public land to the South Dakota National Guard for facilities would be less likely as ACEC goals and direction would need to be considered prior to approval of a transfer. Maintaining the visual resource objectives would be regulated by the BLM as opposed to the South Dakota National Guard as in Alternative B and D.	Transfer of up to 50 acres of public land to the South Dakota National Guard for facilities would affect the visual resources on the remaining ACEC. Effects would depend on the development and may create visual contrasts that are inconsistent with VRM objectives.	No transfer of public land to the South Dakota National Guard for facilities would result in the BLM retaining visual resource management responsibilities for this area.	Same as Alternative B.
Impacts from Fossil Cycad ACEC	Current designation of VRM Class IV affords little protection to the visual resources.	Provides more protection for visual resources by changing to VRM Class II, allowing only minor change to the characteristic landscape.	Same as Alternative B.	Same as Alternative B.
Impacts from sage-grouse ACEC designation	No designation. No impact.		No impact from designation	No designation. No impact.
Impacts to Fire Management and Ecology FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Fire Management and Ecology management actions	Forestry, rangeland, and hazardous fuels treatment average acres per year: Mechanical - 346 Prescribed fire - 213	Forestry, rangeland, and hazardous fuels treatment average acres per year: Mechanical - 400 Prescribed fire - 1000	Forestry, rangeland, and hazardous fuels treatment average acres per year: Mechanical - 350 Prescribed fire - 500	Forestry, rangeland, and hazardous fuels treatment average acres per year: Mechanical - 400 Prescribed fire - 1000
Impacts from Vegetative	Rest periods before and after	Rest periods from livestock grazing up to one year prior to		Rest periods from livestock

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Communities -Forests and Woodlands -Rangelands -Riparian and Wetlands -Noxious and Invasive -Special Status Plants	burning would be determined and implemented at the project level.	treatment and up to two growing seasons following treatments may be desirable in some circumstances and would benefit fire and fuels management. Adaptive management at the project level would allow livestock grazing prior to recommended rest periods when determined such action is needed.		grazing up to one year prior to treatment and up to one growing seasons following treatments may be desirable in some circumstances and would benefit fire and fuels management. Adaptive management at the project level would allow livestock grazing prior to recommended rest periods when determined such action is needed.
	Land treatments would be implemented to meet watershed, grazing management, and wildlife objectives.	In addition to watershed, grazing management, and wildlife objectives, land treatments would be used to achieve, maintain, and/or improve fire regimes and condition classes, which specifically benefits fire and fuels management.		In addition to watershed, grazing management, and wildlife objectives, land treatments would be used to achieve, maintain, and/or improve fire regimes and condition classes, which specifically benefits fire and fuels management.
Impacts from Noxious Weeds management actions	Actively managing noxious and invasive vegetative species utilizing IPM methods, including early spring grazing and prescribed fire, could benefit fire suppression efforts by reducing fuel load and the rate of fire spread in the event of wildfire.			Actively managing noxious and invasive vegetative species utilizing IPM methods, including early spring grazing and prescribed fire, could benefit fire suppression efforts by reducing fuel load and the rate of fire spread in the event of wildfire.
Impacts from Wildlife management actions	No related management action.	Prescribed burning would be allowed in Greater Sage-	Prescribed burning would not be allowed in Greater Sage-	Prescribed burning would be allowed in Greater Sage-

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
including Special Status Species management actions		Grouse PPAs if the activity would benefit sagebrush communities. More acres would be available for prescribed burning for vegetation treatments than Alternative C. This would allow more flexibility and opportunities to meet fire management and other resource objectives.	Grouse PPAs/ACEC. Fewer acres (96,379 acres) would be available for prescribed burning for vegetation treatments. This could limit the flexibility for designing, planning, and implementation of fuels projects in these areas.	Grouse PPAs if the activity would benefit sagebrush communities. More acres would be available for prescribed burning for vegetation treatments than Alternative C. This would allow more flexibility and opportunities to meet fire management and other resource objectives.
	No related management action.	Buried power lines would benefit fire management activities by reducing hazards during fire and fuels activities.		Buried power lines would benefit fire management activities by reducing hazards during fire and fuels activities.
Impacts from Visual Resources management actions	Fewest amount of acres (approx. 1,204 acres) designated in VRM Class II, which may affect the extent of some fire management actions and fuels treatments.	Second fewest acres (approx. 1,517 acres) designated in VRM Class II. This would provide more flexibility for designing, planning, and implementation of fuels projects than Alternative C.	Highest amount of acres (approx. 11,579 acres) designated in VRM Class II. This could limit the effectiveness and flexibility for designing, planning, and implementation of fuels projects than Alternatives A and B.	Second fewest acres (approx. 1,517 acres) designated in VRM Class II. This would provide more flexibility for designing, planning, and implementation of fuels projects than Alternative C.
Resource Uses				
Impacts from Livestock Grazing management actions	Minor increase in fine fuels compared to Alternative from lower AUMs (grazing level).	Within the Exemption Area, an increase of AUMs and acres capable for cattle grazing could reduce fire behavior and intensity of wildfires by reducing the amount of fine fuels available to burn.	Impacts same as Alternative A.	Within the Exemption Area, an increase of AUMs and acres capable for cattle grazing could reduce fire behavior and intensity of wildfires by reducing the amount of fine fuels available to burn.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	Within the Fort Meade ACEC, not extending the grazing period from October 15th to October 31st could increase the number of acres and days that are available to utilize prescribed fire as a treatment tool.	Within the Fort Meade ACEC, extending the grazing period from October 15th to October 31st could reduce the number of acres and days that are available to utilize prescribed fire as a treatment tool.	Impacts same as Alternative A.	Within the Fort Meade ACEC, extending the grazing period from October 15th to October 31st could reduce the number of acres and days that are available to utilize prescribed fire as a treatment tool.
Impacts from Recreation/Visitor Services management actions	Managing the Fort Meade Recreation Area and Exemption Area as SRMAs would likely not affect forest health/hazardous fuels treatments.			Managing the Fort Meade Recreation Area and Exemption Area as SRMAs would likely not affect forest health/hazardous fuels treatments.
Impacts from Travel Management actions	Off-road game retrieval and permitted OHV activities could present potential for human caused fire starts.			Off road game retrieval and permitted OHV activities could present potential for human caused fire starts.
Impacts from Forest and Woodland Products management actions	Allowing for vegetation and forestry product management activities would allow for the improvement and maintenance of ecosystem functionality. Improvements or maintenance of vegetation that contribute to a reduction of hazardous fuels on the landscape would, in the short term and long term, benefit the Fire Management and Ecology program through reduced risk to firefighters and the public. Forest health and vegetative treatments alter fire behavior/severity by reducing ladder fuels and decreasing canopy cover; thereby inhibiting vertical fire spread and reducing the risk of crowning, spotting, and high intensity fire.			Allowing for vegetation and forestry product management activities would allow for the improvement and maintenance of ecosystem functionality. Improvements or maintenance of vegetation that contribute to a reduction of hazardous fuels on the landscape would, in the short term and long term, benefit the fire management and ecology program through reduced risk to firefighters and the public. Forest health and vegetative treatments

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
				alter fire behavior/severity by reducing ladder fuels and decreasing canopy cover; thereby inhibiting vertical fire spread and reducing the risk of crowning, spotting, and high intensity fire.
Impacts from Transportation Facilities and Access management actions	Permanent road construction would be allowed and could cause delays in implementing forest health and fuels reduction activities. Alternatively, new roads or increased maintenance of existing roads would improve access for fire suppression and fuels management activities and would create barriers to fire spread, especially in grass/shrubland areas.		No new permanent road construction would be allowed which could potentially limit forest health treatments, fuels reduction treatments, and fire management activities.	Permanent road construction would be allowed and could cause delays in implementing forest health and fuels reduction activities. Alternatively, new roads or increased maintenance of existing roads would improve access for fire suppression and fuels management activities and would create barriers to fire spread, especially in grass/shrubland areas.
Impacts to Forest & Woodland Products FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Wildlife management actions Including Special Status Species	Wildlife habitat treatments provide an opportunity for the sale of forest products.			
Impacts from Forests and Woodlands management actions	Snag and cavity bearing tree use (salvage) is unrestricted, except in Fort Meade ACEC, where only dead trees in groups of 10 or more may be	Snag and cavity bearing tree use (salvage) would be allowed. This alternative provides at least as much opportunity to salvage forest	Snag and cavity bearing tree use (salvage) of forest products is allowed only in cases where immediate public safety is the concern and	Snag and cavity bearing tree use (salvage) would be allowed. This alternative provides at least as much opportunity to salvage forest

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	salvaged.	products as Alternatives A and D.	existing road access is available. Limits on salvage opportunities decrease the potential for salable products.	products as Alternatives A and B.
Impacts from Fire Management and Ecology management actions	Fuel hazard treatments provide an opportunity for the sale of forest products and reduction of Mountain Pine Beetle risk.			
Impacts from Fire Management and Ecology management actions	Sale of forest products from fuel hazard treatments is more likely with the ability to build roads for access.		Inaccessibility, due to road restrictions, may limit the opportunity to effectively manage fuel loads by selling and removing forest products.	Sale of forest products from fuel hazard treatments is more likely with the ability to build roads for access.
Impacts from Cultural Resources management actions	Sale of forest products would be designed to protect and maintain cultural resources.			
Impacts from Paleontological Resources management actions	Sale of forest products is prohibited on the Fossil Cycad ACEC.			
Impacts from Visual Resources management actions	Sale of forest products would be designed to meet the visual resource objectives under all alternatives.			
Resource Uses				
Impacts from Livestock Grazing	Developments such as fences, gates, and water developments associated with grazing must be protected during forest product removal, adding to the base cost of operations.	Increase in number of pastures increases developments such as fences, gates, and water developments that must be protected during forest product removal; increasing the cost compared to Alternative A.	Same impacts as Alternative A.	Increase in number of pastures increases developments such as fences, gates, and water developments that must be protected during forest product removal; increasing the cost compared to Alternative A.
Impacts from Recreation/Visitor Services	Lack of designation leaves the management to a project	ROS designations retain the opportunity for motorized	The designation and subsequent management of	ROS designations retain the opportunity for motorized

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	specific basis, but usually few restrictions would be placed on motorized access, including mechanized forest product removal.	travel, including mechanized forest product removal, increasing the likelihood of the sale of forest products.	non-motorized areas (184,354 acres) may limit the feasibility of the sale of forest products.	travel, including mechanized forest product removal, increasing the likelihood of the sale of forest products.
Impacts from Travel Management	New roads could be built, so the sale of forest products would be more likely to be feasible than Alternative C.		No new roads would be built under this alternative, potentially limiting the sale of forest products. Treatment financed through the sale of products would be reduced and may be unavailable for dealing with disease and insect infestations. Travel management plans may eliminate cross country travel for any reason, including forest product removal.	New roads could be built, so the sale of forest products would be more likely to be feasible than Alternative C.
Impacts from Forest and Woodland Products management actions				
Average Sawtimber Sales (Special Forest Products)	190 ccf/yr	190 ccf/yr	180 ccf/yr	190 ccf/yr
Average Sawtimber Sales (Traditional and Stewardship Sales)	1600 ccf/yr	1600 ccf/yr	1500 ccf/yr	1600 ccf/yr
Average Annual Sawtimber Sales (Total estimate)	1790 ccf/yr	1790 ccf/yr	1680 ccf/yr	1790 ccf/yr
Average Firewood Sales	33 cords/yr	33 cords/yr	30 cords/yr	33 cords/yr
Average Christmas Tree Sales	3 trees/yr	3 trees/yr	3 trees/yr	3 trees/yr
Average number of Posts (line and corner)	400 posts/yr	400 posts/yr	400 posts/yr	400 posts/yr

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Probable Sale Quantity (rounded estimate)	7000 Tons/yr	7000 Tons/yr	6000 Tons/yr	7000 Tons/yr
Lands and Realty				
Impacts from Land Tenure management actions	There would be a negligible impact from the sale or exchange of BLM-administered lands on the forest product resource. Some gains or losses may be expected in product amounts, quality, and accessibility; estimating these changes would occur with project specific analysis.			
Impacts from Rights-of-Way management actions	Rights-of-Way would be pursued to access forest products when project specific analysis identifies this need.			
Impacts from Transportation Facilities and Access management actions	The requirements for road maintenance under timber sale contracts increase the likelihood the used roads would be kept in good shape.			
Special Designations				
Areas of Critical Environmental Concern				
Impacts from continued designation of Fort Meade ACEC	Fort Meade ACEC would be available for forest product removal for wildlife habitat improvement and fuel hazard concerns. The opportunity to sell forest products is the same under all alternatives.			
Impacts from continued designation of Fossil Cycad ACEC	Forest product removal would be prohibited on the Fossil Cycad ACEC. Products could not be sold from these 320 acres under any alternative.			
Greater Sage-Grouse PPAs ACEC new designation	No designation. No impact.		Designation would not result in an impact as forests or woodlands are not present in PPAs/ACEC.	No designation. No impact
Impacts to Grazing FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Water Resources management actions	No impact.	No impact.	No Surface Occupancy (NSO) within riparian areas on 30,487 acres would have negligible impacts on livestock grazing.	

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Impacts from actions Vegetative Communities management actions	Greater improvement to livestock forage than Alternative C, but less than Alternatives B and D. A short-term increase in forage quantity would be expected on the average 559 acres of BLM land treated mechanically and with prescribed fire annually. Conversion of pastures from native species to tame pastures would be allowed with possible increases in forage quantity and quality.	Greatest improvement to livestock forage would occur. A short-term increase in forage quantity would be expected on the average 1,400 acres of BLM land treated mechanically and with prescribed fire annually. Conversion of pastures from native species to tame pastures would be allowed with possible increases in forage quantity and quality.	Least improvement to livestock forage would occur. A short-term increase in forage quantity would be expected on the average 850 acres of BLM land treated mechanically and with prescribed fire annually. No conversion of pastures from native species to tame pastures would be allowed.	Greatest improvement to livestock forage would occur. A short-term increase in forage quantity would be expected on the average 1,400 acres of BLM land treated mechanically and with prescribed fire annually. Conversion of pastures from native species to tame pastures would be allowed with possible increases in forage quantity and quality.
	Allotments that are not meeting riparian habitat or water quality standards due to current livestock grazing management would be required to make management changes to move towards meeting the standards. Management changes would address the guidelines in the Montana/Dakotas Standards for Rangeland Health and Guidelines for Livestock Grazing Management (BLM 1997). Impacts to livestock grazing would be negligible across the planning area with minor impacts to individual allotments.			
Impacts from Rangeland management actions	Livestock distribution would be minimized where guidelines are not used for supplement placement away from riparian areas.	Livestock would be better distributed throughout a pasture where supplements would not be allowed within ¼ mile of riparian areas.		
Impacts from Riparian and Wetlands management actions	No impact.		Changes to livestock grazing levels would be minor at Fort Meade ACEC with six inch stubble height requirement.	Same as Alternative A.
Impacts from Noxious and Invasive management actions	Noxious weed impacts to livestock grazing would be negligible across the planning area.			
Impacts from Special Status Plants management actions	No impact.	A negligible impact to livestock grazing would occur where grazing would be restricted in areas with high concentration of TES plants due to negative impacts from livestock grazing as determined through a review by an interdisciplinary team.		

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Wildlife including Special Status Species management actions	Fence modification or removal could be implemented to improve wildlife movement. Grazing management would become less effective where fences would be removed. Impact to livestock grazing would be negligible across the planning area.			
	Maintaining 8 to 12 inches of residual herbaceous growth on 50% of the uplands at Fort Meade needed for nesting by ground-nesting birds would have no impact to livestock grazing.			
	An estimated 1,058 AUMs involving the 17 allotments would be recommended as not available for domestic sheep and goat grazing. A negligible impact on grazing would result from any of the alternatives related to domestic sheep and goat grazing allotments within bighorn sheep range.	An estimated 904 AUMs involving 11 allotments would not be available for domestic sheep and goat grazing. Impacts to livestock grazing would be negligible.	An estimated 2,051 AUMs involving 32 allotments would not be available for domestic sheep and goat grazing. They would continue to be available for cattle, horse, or bison grazing. Currently, no allotments are authorized for domestic sheep or goats within 15 miles of bighorn sheep range. Impacts to livestock grazing would be negligible.	
	Livestock grazing would be limited at Fort Meade ACEC to May 15th through October 15th to enhance wildlife habitat. There would be a minor impact to the three allotments at Fort Meade ACEC.	Livestock grazing season would be extended to May 1st through October 31st at Fort Meade ACEC. There would be a negligible impact to the three allotments at Fort Meade ACEC.	Same as Alternative A.	Same as Alternative B.
	Additional water sources provided for wildlife would increase livestock water and improve livestock distribution where livestock are allowed access to new water sources. Benefits would be slightly less than Alternative B.	Same as Alternative A. Benefits would be greater since water sources would be provided for wildlife and fisheries and opportunities to increase water level on existing water sources would be developed.		

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Impacts from Prairie Dogs management actions	Prairie dog treatment is least restrictive in Alternatives A and B with no impact to livestock grazing.	Same as Alternative A.	Reintroduction of prairie dogs could be considered on large tracts of public land (10,000 acres. The impacts to livestock grazing and AUMs would be moderate with a decrease in total authorized AUMs in potential reintroduction sites.	Reintroduction of prairie dogs could be considered on historic colonies or large blocks of public land. There would be a moderate impact with a decrease in total authorized AUMs in any area where prairie dogs would be reintroduced on a large scale.
Impacts from Big Game management actions	No impact.	No impact.	Prohibited livestock grazing between December 1 and March 31 on allotments within crucial winter range for big game that are not meeting Standards for Rangeland Health (BLM 1997) would have negligible impacts across the planning area while impacts could be substantial for individual allotments.	No impact.
Impacts from Fire Management and Ecology management actions	Short-term impacts would vary by individual allotment with an estimated 58 AUMs temporarily unavailable for grazing on 213 acres each year following prescribed burning depending on site conditions.	Short-term impacts to individual allotments would occur as livestock grazing would not occur on an estimated 1,000 acres each year following prescribed burning treatment with 270 AUMs temporarily unavailable for grazing.	Short-term impacts to individual allotments would occur as livestock grazing would not occur on an estimated 1,000 acres with 270 AUMs temporarily unavailable for grazing each year following prescribed burning treatment on 500 acres annually for the previous two seasons. Impacts to individual grazing lessees would be slightly greater than Alternatives A, B,	Same as Alternative B.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
			and D as the lessees would be required to provide alternative feed sources for their livestock for two years instead of one.	
	Aside from temporary loss of forage, fire can benefit livestock grazing by improving quality, quantity, and availability of forage in the long term.			
Impacts from Cultural Resources management actions	Range improvement location and design may be restricted to avoid cultural resources. Impacts to livestock grazing would be minor for individual allotments and negligible throughout the planning area. Cultural Resources Protection condition would be placed on all grazing leases.			
Impacts from Paleontological Resources management actions	No impact to livestock grazing as paleontological reviews would be carried out on a case by case basis.	Minor impact to livestock grazing as surveys for paleontological resources would be considered prior to approval of surface-disturbing range improvements. More impacts to livestock grazing than Alternative A, and fewer impacts than Alternative C.	Minor impact to livestock grazing as surveys for paleontological resources would be completed for all PFYC 3, 4, and 5 geologic formations prior to approval of surface-disturbing range improvements. More impacts to livestock grazing than Alternatives A, B, and D.	Same as Alternative B.
Impacts from Visual Resources management actions	No impacts.	CSU special design on facilities on 274,000 acres within all VRM classes may be required which would have minor impacts on livestock grazing as it would require additional surveys and design changes to projects.		
Resource Uses				
Energy and Minerals	Oil and gas mineral development and bentonite mining would reduce AUMs locally through surface disturbance. The impact on AUM allocations could be substantial for individual allotments, but the overall impact in the planning area is expected to be negligible.			
Impacts from Leasable Minerals management actions				
Impacts from Salable management actions Minerals				
Impacts from Locatable				

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Minerals management actions				
Impacts from Livestock Grazing management actions	Alternative A and C provide the fewest acres (approximately 271,000) available for livestock grazing supporting approximately 73,400 AUMs.	Alternatives B and D provide the greatest opportunity for livestock grazing with approximately 272,000 acres available supporting approximately 77,300 AUMs.	Same as Alternative A.	Same as Alternative B.
	There would continue to be 428 Custodial (C) category allotments, 21 Improve (I) category allotments, and 55 Maintain (M) category allotments. No impact to livestock grazing.	There would be 324 Custodial (C) category allotments, 21 Improve (I) category allotments, and 159 Maintain (M) category allotments. Impacts to livestock grazing would be negligible.		
	There would be no impact to livestock grazing where BLM would use a yearling factor of 0.7 AU for yearling cattle.		There would be a negligible impact to livestock grazing where BLM would use a factor of 1.0 AU for yearling cattle. There would be 28 grazing lessees permitted to run yearling cattle that would be authorized to run fewer cattle under their grazing lease.	Same as Alternative A.
	AUMs remain available on allotments where grazing preference is relinquished.		AUMs could be reduced, suspended, or eliminated where grazing preference is relinquished during the life of the plan to protect other resource values. There could be a negligible decrease in overall AUMs.	
	Range improvement projects would continue to be developed across the planning area. Short-term impacts would include soil exposure to erosion and noxious weed invasion and a shift in plant communities to earlier seral vegetation. Typically regeneration of vegetation occurs within two to three growing seasons. Rangeland improvement projects allow livestock			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	managers and lessees to better implement grazing management practices and manage the distribution and movement of livestock within allotments. Overall, the long-term impacts from these facilities would be beneficial to livestock grazing.			
	Livestock grazing within the Fort Meade ACEC would continue under a vegetative grazing use contract through a bidding process. There would be no impacts to livestock grazing from this action.			
	No impact.	Splitting the Westside pasture from the Bear Butte allotment to make a separate Section 15 grazing allotment would have a negligible impact on livestock grazing.	Same as Alternative A.	Same as Alternative B.
	Livestock grazing within the Exemption Area would be limited to 1,349 acres and 224 AUMs currently leased.	Livestock grazing within the Exemption Area would be limited to 2,957 acres and up to 492 AUMs.	Same as Alternative A.	Same as Alternative B.
Impacts from Recreation/Visitor Services management actions	Impacts to livestock grazing would be negligible.			
Impacts from Travel Management actions	Changes to OHV use and travel management areas would not affect livestock grazing as lessees would continue to be allowed wheeled cross country travel for the management of their animals and allotment unless specifically precluded on the lease. This would have no impact to livestock grazing.			
Impacts from Forest and Woodland Products management actions	Silvicultural practices used to reduce hazardous fuels or meet other resource objectives would improve the quality and quantity of forage, thereby improving flexibility in managing livestock. The number of grazing allotments in forest and woodland areas is limited throughout the planning area; therefore the impacts to livestock grazing would be negligible.			
Impacts from Lands and Realty management actions	Lands actions would likely occur throughout the planning area with a no net change in AUMs expected across the planning area. Lands actions frequently have a greater impact on specific allotments than on the total number of AUMs in the planning area.			
Impacts from Rights-of-Way management actions -Impacts from Leases and Permits	Lands actions would be considered at the project level with undetermined acres available. Livestock	150 acres and 37 AUM would not be available for livestock grazing on the Fort Meade ACEC due to lands	No net change in AUMs due to lands actions.	Same as Alternative B.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
-Withdrawals management actions	grazing could be minimally impacted by lands actions.	actions. A slight reduction in livestock number or grazing season would be implemented.		
Impacts to Recreation and Visitor Services FROM other resources, uses, special designations for each alternative				
Impacts from Wildlife management actions including Special Status Species	Few protection measures applied to the least acres results in potential for fragmentation of the landscape, leading to decreased recreation opportunities incorporating solitude, reliance on self, and few management controls.	Intermediate amount of acres under protection measures results in potential for some retention of recreation opportunities for solitude, reliance on self, and few management controls. Hunting quality may improve due to decreased disturbance.	Increased protection acres results in retention of dispersed recreation opportunities. Hunting quality and degree of difficulty may increase.	Intermediate amount of acres under protection measures results in potential for some retention of recreation opportunities for solitude, reliance on self, and few management controls. Hunting quality may improve due to decreased disturbance.
Impacts from Fisheries management actions including Special Status Species	Fishing opportunities may be enhanced by stocking programs.	Same as Alternative A.	Supplemental stocking of game fish would not be allowed where there is adequate natural reproduction. Fishing opportunities may be reduced since the natural reproduction may not be in an appropriate size class.	Fishing opportunities may be enhanced by stocking programs.
Impacts from Fire Management and Ecology management actions	Treatments to reduce fire hazard and restore ecosystem function have the potential to disrupt recreation activities, however it is anticipated the impacts would be minor and short-term.			
Visual Resources	Lack of VRM designation results in less protection for visual resources, potentially affecting the quality of recreation experiences.	Majority of the planning area would be managed for VRM Class IV, which may potentially result in changes to the characteristic landscape, reducing the	Majority of the planning area would be managed for VRM Class III, which may potentially result in moderate changes to the characteristic landscape, reducing the	Majority of the planning area would be managed for VRM Class IV, which may potentially result in changes to the characteristic landscape, reducing the

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
		quality of recreation experiences.	quality of recreation experiences. Retention of the characteristic landscape in VRM Class II would be highest in this alternative.	quality of recreation experiences.
Resource Uses				
Impacts from Energy and Minerals management actions -Leasable Minerals -Salable Minerals -Locatable Minerals	Development of energy resources would affect recreation quality through visual quality impacts, noise increases, fragmentation from roads (both positive from increasing access, and negative from disturbance).	Potential impacts would be greatest due to the expectation of the most development.	Potential impacts would be more than Alternative A, but less than Alternative B, due to the intermediate amount of development anticipated.	Impacts less than Alternative A, slightly less than Alternative B but more than Alternative C.
Impacts from Livestock Grazing management actions	Livestock Grazing and associated practices may have a detrimental impact to recreation from manure and its associated scent, fragmentation due to fences, and permittee activities. The impact on recreation from livestock grazing activities would be negligible.			
Impacts from Recreation/Visitor Services management actions	One SRMA (Fort Meade ACEC) would be designated, indicating a commitment to funding for recreation.	Fort Meade ACEC and the Exemption Area would be administratively designated as SRMAs, indicating a commitment to funding for recreation. The rest of the planning area would be managed as ERMA.	One SRMA (Fort Meade ACEC) would be designated, indicating a commitment to funding for recreation similar to Alternative A. The rest of the planning area would be managed as ERMA,	Fort Meade ACEC and the Exemption Area would be administratively designated as SRMAs, indicating a commitment to funding for recreation. The rest of the planning area would be managed as ERMA.
Impacts from Travel Management actions	Motorized travel limited to existing roads on 264,706 acres and limited to designated routes on 7,046 acres (Fort Meade and Fossil Cycad ACECs).	Motorized travel limited to existing roads on approximately 143,528 acres, and limited to designated routes on approximately 128,224 acres (TMAs and ACECs) after travel management planning is completed.		
	No RSC classes are identified.	The planning area would be managed for approximately	Middle Country characteristics would be	Same as Alternative B

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
		261,325 acres of Middle Country characteristics, approximately 11,655 acres (Fort Meade ACEC and the Exemption Area) of Front Country, Fossil Cycad ACEC (320 acres) would be managed for Back Country characteristics recreation.	available on approximately 88,539 acres. Management for Back Country characteristics on approximately 178,163 acres would shift the recreation type use and quality. Hunting would be most impacted, increasing solitude and perhaps hunting success for the fewer people who would walk to interior hunting spots. Front Country characteristics would be available on approximately 6,574 acres (Fort Meade ACEC).	
Impacts from Travel Management associated with game retrieval	Game retrieval is not allowed so motorized travel is restricted to existing or designated roads.	Allowing off road motorized game retrieval would negatively impact the recreation resource by increasing travel off roads, creating new trails and disturbance, and creating an enforcement challenge. A slight positive impact would be the retention of users that otherwise would not hunt.	Same impacts as Alternative A.	Game retrieval is not allowed so motorized travel is restricted to existing or designated roads.
	Motorized travel allowed to campsites within 300 feet of road.	Motorized travel allowed to campsites within 300 feet of road.	Motorized travel allowed to campsites within 100 feet of road. Previous (2001) Region-wide decision allowed up to 300 feet. Potential for confusion and conflict.	
Impacts from Forest and Woodland Products management actions	The sale and removal of forest products may impact recreation through addition and maintenance of roads	Slightly more forest acres are proposed to be treated, however the difference between Alternatives A and	New roads would not be added in the Exemption Area, limiting the road use impacts to the current roads. The	Slightly more forest acres are proposed to be treated, however the difference is negligible. Impact to

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	and the disturbance caused by harvesting equipment. Impacts are expected to be minor and short-term.	B is negligible. Impact to recreation from the sale of forest products is expected to be minor and short-term.	impacts to recreation are still expected to be minor and short-term.	recreation from the sale of forest products is expected to be minor and short-term.
Impacts from Lands and Realty -Land Tenure -Rights-of-Way --Leases and Permits -Withdrawals	Disposal would impact the recreation resource through reduction in available land. Associated roads would cause fragmentation and increase motorized accessibility. Exchanges that result in a larger block (as opposed to scattered parcels) improve recreation opportunities.			
Special Designations				
Impacts from Areas of Critical Environmental Concern				
Impacts from continued Fort Meade ACEC designation	The continued designation and management of the Fort Meade ACEC affords a unique recreation opportunity for the community of Sturgis as well the region. The natural appearing open space, maintained native surface trails and rustic development campgrounds provide a diversity of recreation choices compared to the City of Sturgis and the abundance of developed campgrounds. Formal designation of the Fort Meade ACEC as a Special Recreation Management Area would help assure funding and coordinated management of the area.			
	No BLM-administered land would be transferred. Alternatives A and B would provide the greatest protection to the Fort Meade ACEC by providing the most acres in ACEC status.	If BLM-administered land is transferred, the boundaries of the ACEC would be changed to match the retained BLM portion. Alternatives B and D would provide the least protection by allowing a potential reduction in the size (up to 226 acre reduction) of the Fort Meade ACEC.	Impact would be the same as Alternative A: No BLM-administered land would be transferred. Alternatives A and B would provide the greatest protection to the Fort Meade ACEC by providing the most acres in ACEC status.	If BLM-administered land is transferred, the boundaries of the ACEC would be changed to match the retained BLM portion. Alternatives B and D would provide the least protection by allowing a potential reduction (up to 226 acre reduction) in the size of the Fort Meade ACEC.
Impacts from continued Fossil Cycad ACEC designation	The designation of the Fossil Cycad ACEC affords protection to the paleontological values. Recreation opportunities may be increased with a different designation, but it would be at the cost of the unique resource.			
Impacts from new Greater Sage-Grouse PPAs ACEC designation	No designation. No impacts.		A slight increase in visitor use during sage-grouse mating season (March/April) may	No designation. No impacts.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
			occur as a result of ACEC designation in PPAs.	
Impacts to Lands & Realty FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Soil Resources management actions	Low potential that right-of-way and other land use authorization applicants' proposals may be denied when located where impacts to sensitive soils cannot be effectively controlled or mitigated and reclamation to BLM standards would likely be unsuccessful.	Potential that right-of-way and other land use authorization applicants' proposals may be denied when located where impacts to sensitive soils cannot be effectively controlled or mitigated and reclamation to BLM standards would likely be unsuccessful.	More potential that right-of-way and other land use authorization applicants' proposals may be denied when located where impacts to sensitive soils cannot be effectively controlled or mitigated and reclamation to BLM standards would likely be unsuccessful.	
Impacts from Water Resources management actions	Surface-disturbing activities associated with lands and realty actions would impact water resources depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion which would negatively affect water quality. Disturbed areas would need to be reclaimed to BLM standards and prescriptions. Right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with water resources protection guidelines.			
Impacts from Vegetative Communities management actions	Surface-disturbing activities associated with lands and realty actions would impact vegetative communities depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion. Areas would need to be reclaimed within recommended native species. Disturbed areas would need to be reclaimed to BLM standards and prescriptions. Right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with protection guidelines for vegetative communities.			
Impacts from Forests and Woodlands management actions	Surface-disturbing activities associated with lands and realty actions would impact forest and woodlands depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion. Areas would need to be reclaimed with recommended native species. Disturbed areas would need to be reclaimed to BLM standards and prescriptions. Right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with forest and woodland protection guidelines.			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Rangeland management actions	Surface-disturbing activities associated with lands and realty actions would impact rangelands depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion. Areas would need to be reclaimed with recommended native species. Disturbed areas would need to be reclaimed to BLM standards and prescriptions. Right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with rangeland protection guidelines.			
Impacts from Riparian and Wetlands management actions	Potential to affect.	Potential that right-of-way and other land use authorization applicants' proposals may be relocated or denied when located where impacts to riparian and wetlands cannot be effectively controlled or mitigated and reclamation to BLM standards would likely be unsuccessful.		
Impacts from Noxious and Invasive Species management actions	Invasive Species Management guidelines may result in increased expense to right-of-way applicants.			
Impacts from Special Status Plants management actions	Potential to be affected.	Potential for right-of-way and other land use authorization applicants' proposals to be denied or relocated when impacts to sensitive plants cannot be effectively mitigated to BLM standards.	More potential for right-of-way and other land use authorization applicants' proposals to be denied or relocated when impacts to sensitive plants cannot be effectively mitigated to BLM standards.	Same as Alternative B.
Impacts from Wildlife management actions including Special Status Species	Potential that right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with wildlife resource and special status species protection guidelines. Only 2% of BLM would be excluded. There would be no	Less potential that right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with wildlife resource and special status species protection guidelines. No BLM would be excluded. 59% of BLM would be an	High potential that right-of-way and other land use authorization applicants may see their proposed projects denied in order to comply with wildlife resource and special status species protection guidelines. 63% of BLM would be excluded. There would be no avoidance areas and 37% would be open.	Moderate potential that right-of-way and other land use authorization applicants may see their proposed projects delayed, denied and/or become less cost effective in order to comply with wildlife resource and special status species protection guidelines. For general types of ROWs

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	avoidance areas and the remaining 98% would be open. Refer to Table 2-1 for details and Map 2-15.	avoidance area and 41% would be open. Refer to Table 2-1 for details and Map 2-16.	Refer to Table 2-1 for details and Map 2-17	2% of BLM would be excluded, 60% would be avoidance and 38% open. For Renewable Energy ROWs: 43.5 would of BLM be excluded, 19% would be avoidance areas and 38% would be open. Refer to Table 2-1 for details and Map 2-19.
Impacts from Fisheries management actions including Special Status Species	Potential that right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with fisheries resource and special status species protection guidelines.	Less potential that right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with fisheries resource and special status species protection guidelines.	Moderate potential that right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with fisheries resource and special status species protection guidelines.	
Impacts from Fire Management and Ecology management actions	Fire management would generally be beneficial to help protect facilities authorized under the lands and realty program by reducing hazardous fuel loads.			
Impacts from Cultural Resources management actions	Potential of right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with cultural resource protection guidelines.	Less potential of right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with cultural resource protection guidelines.	Moderate potential of right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with cultural resource protection guidelines.	
Impacts from Paleontological Resources management	Least potential of right-of-way and other land use	Less potential of right-of-way and other land use	Moderate potential of right-of-way and other land use	Less potential of right-of-way and other land use

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
actions	authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with resource paleontological protection guidelines.	authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with paleontological resource protection guidelines.	authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with paleontological resource protection guidelines.	authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with paleontological resource protection guidelines.
Impacts from Visual Resources management actions	Potential of right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with visual resource protection guidelines.	Less potential that right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with visual resource protection guidelines.	Most potential that right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with visual resource protection guidelines.	Moderate potential that right-of-way and other land use authorization applicants may see their proposed projects delayed and/or become less cost effective in order to comply with visual resource protection guidelines.
Resource Uses				
Impacts from Energy and Minerals management actions				
Impacts from Leasable Minerals management actions	Potential for requests for rights-of-way for utilities, access and other facilities for the management of leasable minerals	More potential for increased requests for rights-of-way for utilities, access and other facilities for the management of leasable minerals.	Potential for increased requests for rights-of-way for utilities, access and other facilities for the management of leasable minerals.	Potential for increased requests for rights-of-way for utilities, access and other facilities for the management of leasable minerals.
Impacts from Salable Minerals management actions	Potential for increased requests for rights-of-way for utilities, access and other facilities for the management of salable minerals			
Impacts from Locatable Minerals management actions	Potential for requests for rights-of-way for utilities, access and other facilities for the management of leasable minerals.	More potential for increased requests for rights-of-way for utilities, access and other facilities for the management of leasable, salable, and locatable minerals.	Potential for increased requests for rights-of-way for utilities, access and other facilities for the management of leasable, salable, and locatable minerals.	Potential for increased requests for rights-of-way for utilities, access and other facilities for the management of leasable, salable, and locatable minerals.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Impacts from Livestock Grazing management actions	Potential for additional infrastructure as a result of livestock grazing use; however, most infrastructure associated with grazing would be authorized as a range improvement and not ROWs. In a few cases, some requests for ROWs associated with roads or other infrastructure to link ranch operations would occur.			
Impacts from Recreation/Visitor Services management actions	This alternative provides the least potential for ROWs and other land use applications to be delayed.	A slight increase in potential for right-of-way and other land use authorization applicants to have their proposed projects delayed and/or become less cost effective in order to comply with recreation/visitor services protection guidelines.	This alternative has the highest potential of right-of-way and other land use authorization applicants to have proposed projects delayed and/or become less cost effective in order to comply with recreation/visitor protection guidelines as more ACECs would be proposed.	Same impacts as Alternative B.
Impacts from Travel Management actions	Low potential to be affected.	Potential to acquire or improve access to public lands.		
Impacts from Forest and Woodland Products management actions	No impact	Potential to acquire or improve access to forest products.		
Impacts from Lands and Realty management actions				
Impacts from Land Tenure management actions	Potential for increased land and reality workloads if the disposal of small, isolated tracts of BLM-administered land.is implemented. Little difference in Alternatives except Alternatives B, C and D may result in slightly less land disposed or transferred due to transfer criteria (refer to Appendix I).			
Impacts from **Rights-of-Way management actions** -Leases and Permits	Lowest potential to be affected as most areas would be open.	Actions associated with the protection of wildlife and special status species including sage grouse would have the most impact and are described in these sections (above). ROW restrictions are summarized in Table 2-1 and in Table 2-2 under the Lands and Realty section. The cost of the infrastructure associated with ROWs may increase as ROWs may need to be longer to avoid areas or may require special design features to be approved to limit impacts to wildlife or special status species.		
Impacts from Withdrawals	The lack of defined corridors across the public land, could lead to various rights-of-way crisscrossing the public land in a scattered pattern.	Two designated utility and transportation corridors would confine future rights-of-way to areas that already contain visual intrusions, such as roads or railroads, rather than crossing the public land in a scattered pattern		

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Impacts from Transportation Facilities and Access management actions	Limited potential to be affected.	Acquiring access and transportation facilities to public lands would be beneficial to the public but could have negative impacts to other resources.		
Impacts from Renewable Energy management actions	Highest number of acres open to renewable energy ROWs would result in the highest number of acres affected by lands and realty authorizations associated with Renewable Energy development. Two percent of BLM surface would be ROW exclusion areas and 98% would be open. There would be no ROW avoidance areas. Refer to the ROW section of Table 2-1 for more details.	Highest number of avoidance areas would result in a moderate to high number of acres affected by ROW authorization for Renewable Energy projects. Avoidance areas would include 59% of BLM surface. There would be no ROW exclusion areas in Alternative B. Open areas would include 41% of BLM surface.	Highest number of acres excluded from ROW actions would result in the fewest acres affected by lands and realty authorizations for Renewable Energy projects and the least number of renewable energy projects that would be implemented on BLM surface. Avoidance areas would include 63% of BLM surface. Open areas would include 37% of BLM surface. There would be no avoidance areas in Alternative C.	More areas restricted as exclusion areas compared to Alternatives A and B but less than Alternative C. Acres affected by Renewable Energy Lands and Realty Actions would be more than Alternative C but less than Alternative A or B. Avoidance areas would include 19% of BLM surface. Renewable Energy ROW Exclusion areas would include 43.5% of BLM surface. Renewable Energy Open areas would include 38% of BLM surface.
Special Designations				
Impacts from Areas of Critical Environmental Concern				
Impacts from continued Fort Meade ACEC designation	Potential to be affected.	Potential that construction costs to applicants may increase due to ACEC exclusion restrictions, while maintenance costs may decrease due to improved access of corridors for ROW		
Impacts from continued Fossil Cycad ACEC designation	Potential to be affected.	Potential that construction costs to applicants may increase due to ACEC exclusion restrictions.		
Impacts from new Greater Sage-Grouse PPAs ACEC designation	No designation. No impact.		Less potential for lands to be transferred from BLM to other parties as a result of ACEC designation.	No designation. No impact.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from National Historic Trails	Potential to be affected.			
Impacts to Leasable Minerals FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Soil Resources: Steep Slopes restriction	Least restriction on slopes. CSU. 30% slopes or greater. Acres Affected: Surface: 8,575 acres Subsurface: 40,476 acres	Intermediate level of restriction on slopes. CSU: Slopes 25% or greater Acres Affected: Surface: 14,061 acres Subsurface: 62,890 acres	Most Restriction on slopes. NSO. Surface-disturbing and disruptive activities are prohibited on slopes 25% or greater. Acres affected would be the same as Alternative B, however restriction would be more severe	Slightly greater, yet still intermediate level of restriction on slopes. A similar number of acres would be CSU as in Alternative B, however less than 1,000 surface acres and 3,248 subsurface acres would be NSO on slopes greater than 50%.
Impacts from Soil Resources: Sensitive Soils restriction	Least restrictive. Sensitive Soils Management Action Stipulation: Open with standard oil and gas stipulations.	Intermediate level of restriction on sensitive soils: Stipulation: CSU. Sensitive soils (soils) with poor reclamation suitability and low fugitive dust resistance. Acres affected: Surface: 39,230 acres Subsurface: 268,414 acres	Most restrictive on sensitive soils: Stipulation: NSO. Surface-disturbing and disruptive activities are prohibited on sensitive soils (soils) with poor reclamation suitability and low fugitive dust resistance. Acres Affected: Surface: 39,230 acres Subsurface: 268,414 acres	Same as Alternative B.
Impacts from Water Resources restriction	NSO in floodplains (flooded soils), wetlands, waterbodies & riparian areas.	NSO in floodplains (flooded soils), riparian areas, wetlands and waterbodies and areas within 300 feet of these features.		

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	Acres Affected: Surface: 13,397 acres Subsurface: 63,426 acres Low potential for adverse impacts to producers.	Acres Affected: Surface: 30,487 acres Subsurface: 146,169 acres Higher potential for producers to have applications denied or use moved to alternate location but still low impacts as only less than 5% of BLM surface and less than 1% BLM of mineral would be NSO to protect these features.		
Wildlife				
Impacts from Wildlife: NSO sharp-tailed grouse and greater prairie-chicken leks stipulation	NSO Surface-disturbing and disruptive activities prohibited ¼ mile Low impacts to O&G Acres Affected: Surface: 0 acres Subsurface: 163 acres		NSO Surface-disturbing and disruptive activities prohibited ½ mile Low impacts to O&G Acres Affected: Surface: 27 acres Subsurface: 805 acres	Same as Alternative B.
Impacts from Wildlife stipulation: sharp-tailed grouse/greater prairie-chicken brood rearing/nesting habitat	TL Timing Limitation: 2 miles 3/1-6/15 Low impacts to O&G Acres Affected: Surface: 1,316 acres Subsurface: 15,378 acres	TL Timing Limitation: 2 miles 3/1-6/30 Low impacts to O&G Acres Affected: Surface: 1,316 acres Subsurface: 15,378 acres	TL Timing Limitation: 3 miles 3/1-6/30 Greater impacts to O&G Acres Affected: Surface: 2,736 acres Subsurface: 34,605 acres	TL Timing Limitation: 2 miles 3/1-6/30 Low impacts to O&G Acres Affected: Surface: 1,316 acres Subsurface: 15,373 acres
Impacts from Wildlife stipulation: Structures of 10 feet in height not allowed or require anti-perching devices – 2 miles of sharp-tailed grouse and greater prairie-chicken nesting habitat	No specific management action – no effect on oil and gas.		Structures of 10 feet in height not allowed or require anti-perching devices – 2 miles of sharp-tailed grouse and greater prairie-chicken nesting habitat. Low impacts to oil and gas.	
Impacts from Wildlife stipulation: Buried power	No specific management action – no effect on oil and gas.		Power lines would be buried, eliminated designed or sited in a manner which does not impact sharp-tailed grouse or greater	

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
lines 2 miles of sharp-tailed grouse or greater prairie-chicken nesting			prairie-chickens. This would affect oil and gas the most.	
Impacts from Wildlife stipulation: Timing Limitation (TL) - big game crucial winter range	TL Surface use is prohibited from December 1 to March 31 within crucial winter range for big game. This stipulation does not apply to the operation and maintenance of production facilities. (This applies to oil and gas only.) – would have the least effect on leasable minerals. Acres Affected: Surface: 106,382 acres Subsurface: 411,150 acres	TL Surface disturbance and disruptive activities would be prohibited from December 1 to March 31 within crucial winter range for big game. This stipulation does not apply to the operation and maintenance of production facilities and would have a moderate impact on leasable minerals.		
Impacts from Wildlife stipulation: Raptor nest sites buffer (that are not special status species) - based on 7 years of past nest occupancy	No specific management action	NSO around nests: ¼ mile Surface: 544 acres Subsurface: 3,059 acres	NSO around nests: ½ mile Surface: 2 258 acres Subsurface: 13,674 acres	NSO around nests: ¼ mile Surface: 544 acres Subsurface: 3,059 acres
Impacts from Wildlife: NSO bighorn sheep range stipulation	No specific management action	Surface occupancy is prohibited in the designated Bighorn sheep range (see Map 2-3) Low impact to O&G Surface: 788 acres Subsurface: 58,072 acres		
Wildlife – Special Status Species (SSS) Raptors				
Impacts from Spec. Status Species stipulation Raptors: bald eagle nesting buffers if active within 5 years	Most restrictive NSO ½ mile around nests Surface: 0 acres	Least restrictive NSO ¼ mile around nests Surface: 0 acres	Same as Alternative A.	

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	Subsurface: 259	Subsurface: 80 acres		
Impacts from Spec. Status Species stipulation Raptors: NSO Peregrine Falcon nesting sites	Most restrictive: NSO 1 mile around nests Surface: 0 acres Subsurface: 0 acres	Intermediate restriction: NSO ½ mile around nests Surface: 0 acres Subsurface: 0 acres	Same as Alternative A.	Same as Alternative B.
Impacts from Spec. Status Species stipulation Raptors: NSO Other federal sensitive and other special status raptor species nest sites - ¼ mile to ½ mile (bald eagles and peregrine falcon addressed separately)	NSO ½ mile. Based on 7 years of past nest occupancy. Minor impacts Surface: 1,837 acres Subsurface: 10,636 acres	Same as Alternative A.	Same as Alternative A.	NSO ¼ mile. Based on 7 years of past nest occupancy. Negligible impacts Surface: 499 acres Subsurface: 7,510 acres
Wildlife – Special Status Species (SSS) Greater Sage-Grouse Habitat Areas (GHA)				
General Habitat Acres	None	GHA outer perimeter boundaries would remain the same under Alternatives B, C and D. Acres in GHA would be larger than Alternative C as PPAs would smaller. Refer to Map 2-4. Surface: 67,035 Subsurface: 425,118	GHA outer perimeter boundaries would remain the same under Alternatives B, C and D. Acres in GHA would be less than Alternative B and D as more areas managed as PPAs. Refer to Map 2-5. Surface: 55,040 Subsurface: 388,912	Same as Alternative B.
Impacts from General Habitat Areas stipulation. NSO sage-grouse lek outside PPAs, in General habitat Areas. (GHAs)	NSO ¼ mile Minor impacts Surface: 81 acres Subsurface: 816 acres	NSO ½ mile Minor impacts Surface: 509 acres Subsurface 2,072 acres	NSO 1 mile Minor impacts Surface: 767 acres Subsurface: 1,846 acres (fewer GHA acres due to larger PPAs/ACEC)	NSO 1 mile Moderate impacts Surface: 2,407 acres Subsurface: 6,243 acres

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from General Habitat Areas stipulation. Timing Limit: sage-grouse winter range	TL: Surface Use prohibited Dec 1 to March 31. Surface 50,791 acres Subsurface: 103,553 acres			
Impacts from Timing Limit stipulation: Sage-grouse brood rearing/nesting habitat, outside PPAs, in General Habitat Areas	Timing 3/1-6/30 2 miles from leks N/A to operation and maintenance. Surface: 5,109 acres Subsurface: 23,584 acres	Timing 3/1-7/15 3 mi. from leks, outside of PPAs in General Habitat Areas Surface: 14,749 acres Subsurface: 31,522 acres	Timing 3/1-7/15 4 mi. from leks; outside of PPAs/ACEC, in General Habitat Areas Surface: 19,926 acres Subsurface: 60,528 acres	Timing: 3/1-7/15, 4 mi. from leks; outside of PPAs in General Habitat Areas Surface: 29,360 acres Subsurface: 65,846 acres Note: acres vary from Alt. C and D as the size of the area outside of the PPA changes.
Impacts from requirement to bury new power lines within 1 to 2 mile of sage-grouse leks and winter range	No specific management action – would have no effect on oil and gas.	All new power lines within 1 mile of sage-grouse leks and within sage-grouse winter range would be buried, eliminated, designed or sited in a manner which would not impact sage-grouse on public lands. – would have a greater effect on oil and gas in General Habitat Areas.	All power lines within 2 miles of sage-grouse leks and within sage-grouse winter range would be buried or eliminated on public lands. – would have the greatest effect on oil and gas, in General Habitat Areas.	Same as Alternative C.
Wildlife – Special Status Species (SSS) Greater Sage-Grouse Protection Priority Areas (PPAs)				
Impacts from the size of Greater Sage-Grouse PPAs	No specific management action – would have no effect on oil and gas.	More restriction than Alternative A but less than Alternative C. NSO restrictions Smaller PPAs of Surface: 83,744 acres	Most restrictive alternative Largest area covered by PPAs/ACEC Surface: 93,266 acres Subsurface: 289,563 acres closed to oil and gas	Same as Alternative B

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
		Subsurface: 253,357 acres would have a greater effect on oil and gas than Alternative A.	– most restrictive to oil and gas.	
Impacts from Greater Sage-Grouse PPAs stipulation: open with NSO, or closed to leasing	No specific management action identified No effect on oil and gas 15 wells would be drilled on BLM managed surface, and 94 wells would be drilled on federal minerals, in the South Dakota Resource Area.	PPAs would be open to oil and gas leasing, but with prohibited surface disturbance and disruptive activities (NSO) stipulation Major effect on oil and gas Surface: 83,744 acres Subsurface: 253,357 acres 12 wells would be drilled on BLM managed surface, and 75 wells would be drilled on federal minerals, in the South Dakota Resource Area.	Entirety of PPAs/ACEC closed to oil and gas leasing Most restrictive to oil and gas. Acres closed would be Surface: 93,266 acres Subsurface: 289,563 acres 7 wells would be drilled on BLM managed surface, and 43 wells would be drilled on federal minerals, in the South Dakota Resource Area. A closure of oil and gas leasing in PPAs/ACEC combined with a ROW exclusion in PPAs/ACEC would create a tendency for project proponents to move the location of proposed infrastructure or use to private or non-federal lands within the Greater Sage-Grouse PPAs/ACEC. When this occurs, BLM would lose control over project design features, mitigation of site specific impacts and BLM would not be able to require disturbed areas to be	Same as Alternative B

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
			reclaimed. In some cases proposed projects would be moved to areas outside of PPAs. Closure of leasing would result in major impacts to producers with limited benefit to sage-grouse across the landscape as a closure would force and concentrate oil and gas activity and infrastructure onto private and non-federal lands within the PPA ACEC and onto private and non-federal lands directly outside of the PPA boundary. Oil and gas production activity in areas already leased and producing in the northern portion of the PPAs would not likely move or shift to other areas as these leases would be honored as valid existing rights.	
Impacts from Greater Sage-Grouse PPAs requirement to bury or modify existing powerlines	No specific management action except guidelines and recommendations for mitigation – would have little effect on oil and gas development.	Within PPAs existing power lines would be buried, eliminated, designed or sited in a manner which would not impact sage-grouse on public lands. The flexibility would provide results in less adverse impacts to producers than Alternatives C and D.	Within PPAs/ACEC existing power lines would be buried or eliminated on public lands. Most restrictive to oil and gas development.	Same as Alternative C

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Special Status Species (SSS) Grassland and Migratory Birds (GAMB)				
Impacts from NSO stipulation: Piping plover within ¼ mile of habitat	NSO ¼ mile of wetlands and associated habitats Low impacts to oil and gas development			
Impacts from NSO Stipulation: Interior least tern within ¼ mile of habitat	NSO ¼ mile of wetlands and associated habitats Low impacts to oil and gas development			
Impacts from Aquatic and Fisheries Resources (AQ) management actions				
Impacts from NSO stipulation: Reservoirs with fisheries (Note: end of wildlife related impacts)	NSO within ¼ mile of Reservoirs with fisheries (AQ4) Surface: 551 acres Subsurface: 12,548 acres			
Impacts from Cultural Resources management actions: Withdrawal of 410 acres Bear Butte National Historic Landmark (410 Acres) would be recommended for withdrawal, while leasable federal minerals and salable federal minerals would be closed (no lease).	No similar action. Would have no effect on oil and gas.	Leasable federal minerals within Bear Butte National Historic Landmark (410 acres) would be closed (no lease) except for oil and gas which would be open to leasing with an NSO stipulation. This would have a negligible effect on oil and gas.	Leasable federal minerals within Bear Butte National Historic Landmark (410 acres) – would be closed (no lease) This would restrict the opportunity for leasable mineral development in a very small area and have a minor effect on oil and gas.	Same as Alternative C
Impacts from Paleontological Resources management actions	A small number of well sites could only be developed after a paleontological survey is completed and evaluated. This would have a negligible effect on leasable mineral operations.	A moderate number of well sites could only be developed after a paleontological survey is completed and evaluated. This would have a negligible effect on leasable mineral operations.	The largest number of well sites could only be developed after a paleontological survey is completed and evaluated. This would have a negligible effect on leasable mineral operations.	A moderately large number of well sites could only be developed after a paleontological survey is completed and evaluated. This would have a negligible effect on leasable mineral operations.

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Visual Resources management actions	Efforts would be necessary to camouflage mineral operations, relocate sites, and/or orient and limit the size of equipment in some cases, which would have a minor effect on leasable mineral operations.			
	NSO on developed recreation areas and undeveloped recreation areas receiving concentrated public use would make a small quantity of oil and gas resources unavailable to development.	NSO on and within ½ mile of designated SRMAs would make a small quantity of oil and gas resources unavailable to development.	NSO on and within 1 mile of designated SRMAs and other developed recreation sites would make a small quantity of oil and gas resources unavailable to development.	Same as Alternative B
Resource Uses				
Energy and Minerals management actions				
Impacts from Salable Minerals management actions	Activities associated with salable minerals could impact leasable mineral projects and potential depending on the amount, location, and type of disturbance.			
Impacts from Locatable Minerals management actions	Activities associated with locatable minerals could impact leasable mineral projects and potential depending on the amount, location, and type of disturbance.			
Livestock Grazing management actions	Reclaimed areas would need to be fenced from livestock grazing for a few years.			
Lands and Realty				
Impacts from Rights-of-Way management actions --Leases and Permits	No similar action	Burial of powerlines would increase costs to leasable mineral mining companies	Burial of all powerlines would increase costs the most to leasable mineral mining companies.	Same as Alternative B
Impacts from Renewable Energy management actions	Activities associated with renewable energy could impact leasable mineral projects and potential depending on the amount, location, and type of disturbance.			
Special Designations				
Areas of Critical Environmental Concern				
Impacts from continued Fort Meade ACEC designation	6,574 acres closed to leasable mineral development. No buffer around Fort Meade	6,574 acres closed to leasable mineral development. NSO on 544 additional acres for	6,574 acres closed to leasable mineral development. NSO on 1,499 additional acres for	Same as Alternative B.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	ACEC. This would be a negligible restriction to oil and gas.	oil and gas development within ½ mile of SRMA would be a negligible existing, plus new, restriction.	oil and gas development within 1 mile of SRMAs would be a negligible existing, plus, still very small new restriction.	
Impacts from continued Fossil Cycad ACEC designation	320 acres closed to leasable mineral development	320 acres to be leased NSO which would be a lesser restriction to oil and gas resources than currently.	Same as Alternative A.	
Impacts from new Greater Sage-Grouse PPAs ACEC designation	No designation. No impact.		Compared to Alternatives B and D there would be little impact from an ACEC designation as PPA restrictions including NSO restrictions would limit development regardless of ACEC designation. Compared to Alternative A, an ACEC designation of PPAs or core use areas could result in more stringent requirements and less development when an ACEC plan is developed at the implementation level.	No designation. No impact.
Impacts to Locatable Minerals FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Soil Resources management actions	Requirement to save topsoil during operations and re-spread during reclamation efforts would slightly increase costs.			
Impacts from Water Resources management actions	NSO (No Surface Occupancy) floodplain stipulation – Surface Occupancy and use is	NSO (No Surface Occupancy) floodplain stipulation – Surface Occupancy and use is prohibited within 300 feet of riparian areas, floodplains, lakes, ponds, rivers, water bodies, and streams. This stipulation would reduce opportunities to develop oil and gas by limiting surface occupancy on 30,487 surface/146,169 subsurface acres.		

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	prohibited within areas of riparian areas, floodplains, lakes, ponds, rivers, water bodies, and streams. 13,397 surface/63,426 subsurface acres.			
Impacts from Wildlife-sharp-tailed grouse management actions	No specific management action – This would affect locatable minerals the least.	Limits on disturbance within 2 miles of a sharp-tailed grouse lek, and brood rearing restrictions would have the greatest effect on locatable minerals.		
Impacts from Special Status Species – sage-grouse management actions	No specific management action – This would affect locatable minerals the least.	PPAs would not be withdrawn, however, many of the BMPs in leasable minerals could be applied to a locatable mineral plan of development or notice	PPAs/ACEC would be withdrawn but the withdrawal would not change bentonite production as most high potential areas in PPAs are claimed and would honored as valid existing rights. Future bentonite mineral exploration and development would shift to areas adjacent to PPAs or to private or non-federal lands within PPAs.	Same as Alternative B
Impacts from Cultural Resources management actions	No specific management action – This would affect locatable minerals the least.		Mineral withdrawal of 410 acres of federal minerals beneath Bear Butte would restrict the opportunity for locatable mineral development in a very small area.	
Impacts from Paleontological Resources management actions	Some locatable minerals could only be developed after a paleontological survey is completed and evaluated. This would negligibly increase costs of development.			
Impacts from Visual Resources	Efforts would be necessary to camouflage mineral operations, relocate sites, and/or orient and size equipment in some cases, which would have a minor effect in mineral operations.			
Resource Uses				
Impacts from Energy and Minerals				
Impacts from Leasable Minerals	Activities associated with leasable minerals could impact locatable mineral projects and potential depending on the amount, location, and type of disturbance.			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Salable Minerals management actions	Activities associated with salable minerals could impact locatable mineral projects and potential depending on the amount, location, and type of disturbance. Since there is little interest or potential in salable minerals in the planning areas, the potential impact would be minimal.			
Impacts from Livestock Grazing management actions	Reclaimed areas would usually need to be fenced from livestock grazing during production and during reclamation for a few years. This would slightly increase development and reclamation costs.			
Impacts from Recreation/Visitor Services management actions	No similar action	An unknown acreage could be affected - Recreational gold panning could be restricted if monitoring determined negative effects to resources. Up to 20 acres could be recommended for withdrawal from mineral entry to be used for recreational gold panning opportunity.	An unknown acreage could be affected - Recreational gold panning could be restricted if monitoring determined negative effects to resources.	Same as Alternative B.
Impacts from Lands and Realty				
Impacts from Rights-of-Way management actions Impacts from Leases and Permits	No similar action	Burial of powerlines would increase costs to locatable mineral mining companies	Burial of all powerlines would increase costs the most to locatable mineral mining companies.	Same as Alternative B.
Impacts from Renewable Energy management actions	Activities associated with renewable energy could impact locatable mineral projects and potential depending on the amount, location, and type of disturbance.			
Special Designations				
Areas of Critical Environmental Concern				
Impacts from Fort Meade ACEC designation	6,574 acres closed to locatable mineral development			
Impacts from Fossil Cycad ACEC designation	320 acres closed to locatable mineral development			
Impacts from Greater Sage-Grouse PPAs ACEC	No designation. No impact.		Compared to Alternative B and D, there would be a minor	No designation. No impact.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
designation			increase in adverse impact to locatable mineral development from an ACEC designation. Under Alternative B, C and, PPA restrictions including limits of surface disturbance and disruption would limit development in PPAs regardless of ACEC designation. Compared to Alternative A, an ACEC designation of PPAs could result in more stringent requirements and less development when an ACEC plan is developed at the implementation level.	
Impacts to Salable Minerals FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Water Resources management actions	NSO (No Surface Occupancy) floodplain stipulation – Surface Occupancy and use is prohibited within areas of riparian areas, floodplains, lakes, ponds, rivers, water bodies, and streams. 13,397 surface/63,426 subsurface acres	NSO (No Surface Occupancy) floodplain stipulation – Surface Occupancy and use is prohibited within areas of riparian areas, floodplains, lakes, ponds, rivers, water bodies, and streams.	30,487 surface/146,169 subsurface acres	
Impacts from Wildlife	No specific management action	Limits on disturbance within 2 miles of a lek, piping plover restrictions, interior least tern restrictions, and roosting restrictions would have the negligible effect on salable minerals.		

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Impacts from Special Status Species – sage-grouse management actions	No specific management action	Little development expected in PPAs – negligible impact	PPAs closed - negligible impact	Same as Alternative B.
Impacts from Cultural Resources management actions	No similar action.		Mineral withdrawal of 410 acres of federal minerals beneath Bear Butte would restrict the opportunity for salable mineral development in a very small area.	
Impacts from Paleontological Resources management actions	Some salable minerals could only be developed after a paleontological survey is completed and evaluated. This would negligibly increase costs of development.			
Impacts from Visual Resources	Efforts would be necessary to camouflage mineral operations, relocate sites, and/or orient and size equipment in some cases, which would have a minor effect on mineral operations.			
Resource Uses				
Impacts from Energy and Minerals management actions				
Impacts from Leasable Minerals management actions	Activities associated with leasable minerals could impact salable mineral projects and potential depending on the amount, location, and type of disturbance.			
-Locatable Minerals	Activities associated with locatable minerals could impact salable mineral projects and potential depending on the amount, location, and type of disturbance.			
Impacts from Lands and Realty management actions				
Impacts from Rights-of-Way management actions Impacts from Leases and Permits management actions	No similar action	Burial of powerlines would increase costs to salable mineral mining companies	Burial of all powerlines would increase costs the most to salable mineral mining companies.	Same as Alternative B.
Impacts from Renewable Energy management actions	Activities associated with renewable energy could impact salable mineral projects and potential depending on the amount, location, and type of disturbance.			
Special Designations				
Areas of Critical Environmental Concern				
Impacts from continued Fort Meade ACEC designation	6,574 acres closed to salable mineral development			

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Impacts from continued Fossil Cycad ACEC designation	320 acres closed to salable mineral development			
Impacts from new Greater Sage-Grouse PPAs ACEC designation	No designation. No impact.		Compared to Alternative B and D, there would be a minor increase in adverse impact to salable mineral development from an ACEC designation. Under Alternative B, C and D PPA restrictions including limits of surface disturbance and disruption would limit development in PPAs regardless of ACEC designation. Compared to Alternative A, an ACEC designation of PPAs could result in more stringent requirements and less development when an ACEC plan is developed at the implementation level.	No designation. No impact.
Impacts to Renewable Energy FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Air management actions	Amount of wind potential would affect development potential.			
Impacts from Climate	Climate change could affect temperature or wind and may affect renewable energy potential.			
Impacts from Soil Resources management actions	Soils restriction on sensitive soils and steep slopes could affect the location of structures and associated facilities.			

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Impacts from Water Resources management actions	Rain and snow could affect types of foundation and placement of such structures to depending on the permeability of the soil.			
Impacts from Vegetative Communities management actions	Surface-disturbing activities associated with renewable energy development could impact vegetative communities depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion. Areas would need to be reclaimed within recommend native species.			
Impacts from Forests and Woodlands management actions	Forest and woodlands could affect the location of structures and associated facilities.			
Impacts from Rangeland management actions	Potential to affect.	Protection of sagebrush habitat would exclude renewable energy facility development within ¼ mile of sage-grouse leks and would have a negative impact on development.	Protection of sagebrush habitat would exclude renewable energy facility development within 1/2 mile of sage-grouse leks and would have a negative impact on development.	Protection of sagebrush habitat would exclude renewable energy facility development within ¼ mile of sage-grouse leks and would have a negative impact on development.
Impacts from Riparian and Wetlands management actions	Riparian areas and wetlands could affect the location of structures and associated facilities.			
Impacts from Noxious and Invasive	Invasive Species Management guidelines may result in increased expense to renewable energy developer.			
Impacts from Special Status Plants management actions	Special status plants could affect the location of structures and associated facilities.			
Impacts from Wildlife management actions including Special Status Species	Little adverse impact to Renewable Energy development. Most areas would be open to development except ACECs. Refer to Map 2-20, the ROW section near the end of Table 2-1 and the Lands and Realty section of Table 2-2 for	Intermediate level of adverse impact to Renewable Energy development as most important wildlife and special status species areas would be avoidance areas rather than exclusion areas and more acres are open to development. Less impact to	This Alternative would result in major, adverse impacts to Renewable Energy Development as most of the planning area would be ROW exclusion areas to protect important wildlife and special status species. In most of these areas, applications	This Alternative would limit Renewable Energy development more than Alternatives A and B but would allow higher levels of development by allowing more avoidance areas compared to Alternative C. Refer to Map 2-18, the ROW

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	details. Summary of affected areas: Two percent of BLM surface would be ROW exclusion areas and 98% would be open. There would be no ROW avoidance areas.	development than Alternatives C and D. Compared to Alternative A, some delay or additional expense to project proponents could occur. Refer to Map 2-21, the ROW section near the end of Table 2-1 and the Lands and Realty section of Table 2-2 for details. Summary of affected areas: Avoidance areas would include 59% of BLM surface. There would be no ROW exclusion areas in Alternative B. Open areas would include 41% of BLM surface.	would be denied. Refer to Map 2-22, the ROW section near the end of Table 2-1 and the Lands and Realty section of Table 2-2 for details. Summary of affected areas: Avoidance areas would include 63% of BLM surface. Open areas would include 37% of BLM surface. There would be no avoidance areas in Alternative C.	section near the end of Table 2-23 and the Lands and Realty section of Table 2-2 for details. Summary of affected areas: Avoidance areas would include 19% of BLM surface. Renewable Energy ROW Exclusion areas would include 43.5% of BLM surface. Renewable Energy Open areas would include 38% of BLM surface.
Impacts from Wildlife studies management actions	Studies could cause delays or if dangers to wildlife are not mitigated would no development would be allowed which would negatively affect development.			
Impacts from Greater Sage-Grouse PPAs	No PPAs proposed. No effect.	PPAs would be excluded from development unless habitat would be maintained or mitigated off-site. This alternative would have a potentially major long-term negative effect on renewable energy. Affected acres: Surface: 84,384 acres	Greater Sage-Grouse PPAs/ACEC would be excluded from development. This alternative would have a more potential for major long-term negative effect on renewable energy Affected Acres: Surface: 96,379 acres	PPAs would be excluded from development unless habitat would be maintained or mitigated off-site. This alternative would have a potentially major long-term negative effect on renewable energy. Affected acres: Surface: 84,384 acres

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from winter range restrictions	Winter range would be open. No effect.	Winter range areas would be closed to renewable energy development, except if winter range would be maintained or mitigated off-site. This alternative would have a potentially major long-term negative effect on renewable energy.	Winter range areas would be closed to renewable energy development. This alternative would have more potential for major long-term negative effect on renewable energy.	Winter range areas would not be closed to development. More potential for development compared to Alternatives B and C but less potential than Alternative A.
Impacts from Fisheries management actions including Special Status Species	Fisheries and other aquatic habitats could affect the placement of renewable energy structures and associated facilities and have a minimal effect.			
Impacts from Fire Management and Ecology management actions	Wildfire could affect or destroy transmission and other related facilities and have a negligible effect.			
Impacts from Cultural Resources management actions	Cultural properties or sites could affect the placement of renewable energy structures and associated facilities and have a minimal effect.			
Impacts from Paleontological Resources management actions	Paleontological resource sites could affect the placement of renewable energy structures and associated facilities and have a minimal effect.			
Impacts from Visual Resources management actions	Visual Resource Class II areas would be open to development but VRM Class II requirements would affect the type and placement of renewable energy structures and associated facilities on 1,203 acres in VRM Class II areas. Impacts would be negligible due to the low number of acres affected and	Visual Resource Class II areas would be ROW avoidance areas for renewable energy development on 1,517 acres. Impacts would be negligible due to the low number of acres affected and the limitations of development in steeper terrain features that are prevalent in Class II	Visual Resource Class II areas would be renewable energy ROW exclusion areas. Renewable energy development would be excluded on 11,579 acres of VRM Class II areas. Impacts would be minor as most VRM Class II areas contain steep terrain features that limit development.	Impacts would be the same as Alternative C.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	the limitations of development in the steeper terrain features that are prevalent in Class II areas.	areas.		
Impacts from Energy and Minerals				
Impacts from Leasable Minerals	Surface-disturbing activities associated with leasable minerals could impact renewable energy depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion.			
Impacts from Salable Minerals management actions	Surface-disturbing activities associated with saleable minerals could impact renewable energy depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion.			
Impacts from Locatable Minerals	Surface-disturbing activities associated with locatable minerals could impact renewable energy depending on the amount, location, and type of disturbance. Surface-disturbing activities would remove protective vegetative cover and can alter soil properties. This would increase the probability of erosion.			
Impacts from Livestock Grazing management actions	Would be affected by the loss of AUMs from disturbance.			
Impacts from Recreation/Visitor Services management actions	Potential to affect.	No commercial wind energy within ½ mile of SRMAs could negatively affect development.	No commercial wind energy within 1 mile of SRMAs could negatively affect development more than Alternative B.	
Impacts from Travel Management	Would have a minimal affect renewable energy development by closing certain roads and trails.			
Impacts from Land Tenure management actions	Land tenure acquisition or disposals could change or eliminate development potential for some previously available lands.			
Impacts from Right-of-way management actions	Potential to affect.	ROW avoidance and exclusion areas could negatively affect renewable energy development.		
Impacts from Leases and Permits management actions	Potential to affect.	Approval or denial of leases and permits would negatively affect renewable energy development.		
Impacts from Withdrawals	Withdrawals of public lands for varying reasons could eliminate some areas from renewable energy development if authorization of the development would impact resources protected by the withdrawal. This would have a negative impact on development.			

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Impacts from Transportation Facilities and Access management actions	Decisions on transportation facilities and access could influence the development of renewable energy if lands become inaccessible due to loss of legal access, road systems, etc.			
Special Designations				
Impacts from Areas of Critical Environmental Concern				
Impacts from continued Fossil Cycad ACEC designation	Potential to affect.	Would not allow any renewable energy authorizations. This is a negative impact.	Would not allow any commercial renewable energy authorizations. This is a negative impact.	
Impacts from continued Fort Meade ACEC designation	Potential to affect.	Would not allow any renewable energy authorizations. This is a negative impact.	Would not allow any commercial renewable energy authorizations. This is a negative impact.	
Impacts from new Greater Sage-Grouse PPAs ACEC designation	No designation. No impact.		Compared to Alternatives B and D, an ACEC designation would result in little difference in impact to Renewable Energy development as these Alternatives would treat PPAs as ROW exclusion in Alternatives C and D and treat PPAs as avoidance areas in Alternative B regardless of ACEC designation. Compared to Alternative A, an ACEC designation of PPAs could result in more stringent requirements and less development when an ACEC plan is developed at the implementation level.	No designation. No impact.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Impacts from National Historic Trails	Potential to affect.			
Impacts to Public Safety FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Soil Resources management actions	CSU on 30% slopes and greater would decrease the possibility of mass wasting/debris flows.	CSU on 25% slopes and greater would decrease the possibility of mass wasting/debris flows to a greater degree.	NSO on 25% slopes would decrease the possibility of mass wasting/debris flows to the greatest extent.	CSU on 25% slopes and NSO on slopes greater than 25% would decrease the possibility of mass wasting/debris flows to a greater degree.
Impacts from Wildlife management actions including Special Status Species	Preservation of some abandoned mine features, especially adits and other openings as bat habitat, while making them safer to the public, would in some cases, increase the complexity and expense of mitigating the physical and chemical hazards of abandoned mined lands, which would have a minor impact.			
Impacts from Fire Management and Ecology management actions	Vegetative treatments, including prescribed fire, to reduce fuel loading would decrease the possibility of intense fires and excessive removal of vegetation and plant debris, thus decreasing the danger of debris flows.			
Impacts from Cultural Resources	Preservation of some abandoned mine site features as cultural resources, while making them safer to the public, would in some cases, increase the complexity and expense of mitigating the physical and chemical hazards of abandoned mined lands.			
Impacts to Special Designations FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Vegetative Communities management actions	Potential for impacts to ACEC values from unrestricted plant gathering that extends into the ground.	Restriction of incidental plant gathering to above ground limits potential adverse impacts to historical and paleontological ACEC values.		
Impacts from Fire Management and Ecology management actions	Treatments designed to retain the character and historic resources would benefit the ACEC values.			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Visual Resources management actions Impacts from continued Fossil Cycad ACEC designation	Designation of VRM Class IV on Fossil Cycad ACEC allows for major modification to the characteristic landscape, which may negatively affect the ACEC resources.	Designation as VRM Class II would allow only minor changes to the characteristic landscape, providing more protection to the visual as well as paleontological resources.	Same impacts as Alternative B	Designation as VRM Class II would allow only minor changes to the characteristic landscape, providing more protection to the visual as well as paleontological resources.
Impacts from continued Fort Meade ACEC designation	Incomplete VRM designation leaves management actions subject to case by case analysis. On the majority of the ACEC a variety of VRM designations subject the ACEC values to a variety of potential modifications; though the protection of the ACEC values still prevail.	Completion of the VRM designation identifies modification limits on the whole ACEC. A variety of VRM designations subject the ACEC values to a variety of potential modifications; though the protection of the ACEC values still prevail.	Designation of all of the ACEC as VRM Class II allows minor modification to the characteristic landscape, more fully protecting the ACEC historical and cultural values than Alternative A or Alternative B.	Completion of the VRM designation identifies modification limits on the whole ACEC. A variety of VRM designations subject the ACEC values to a variety of potential modifications; though the protection of the ACEC values still prevail.
Impacts from Fort Meade ACEC Historic Places or Landmark designation.	Present National Register of Historic Places District Boundary for Fort Meade includes 3,200 acres.	Upgrade formal nomination of Fort Meade as a National Historic Landmark for a National Register Landmark listing of 6,570 acres. Potential for higher visitor use compared to Alternatives A or C.	The National Register of Historic Places Fort Meade District would incorporate a nomination addition of 3,370 acres. Total acres in Historic District would be changed to 6,570.	The current National Register of Historic Places would be revised to include a nomination for the National Historic Landmark to incorporate, approximately 3,370 additional acres. Potential for higher visitor use compared to Alternatives A or C.
Resource Uses				
Impacts from Livestock Grazing management actions	Fencing, weed control, and monitoring would reduce any minor potential impacts to ACEC features. Livestock were a historic use of the area.			
Impacts from Recreation/Visitor Services management actions	Visitor services/recreation development is not proposed at the Fossil Cycad ACEC.			
	Recreation/visitor services would be developed in coordination with the ACEC values at the Ft. Meade ACEC. Specific project planning would identify measures to ensure ACEC value retention.			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts from Travel Management	Motorized travel is restricted to designated roads and trails.			
Impacts from Forest and Woodland Products management actions	Forest product removal is prohibited in the Fossil Cycad ACEC.			
	Forest product removal is allowed in the Fort Meade ACEC. Activity level planning would identify measures to retain values of the ACEC.			
Lands and Realty				
Impacts from Land Tenure management actions	The decision to transfer from Ft. Meade ACEC up to 170 acres to the National Cemetery, and up to 50 acres to the National Guard would depend on project level planning. If approved, the acreage and boundary of the ACEC would change.	Transfer from Ft. Meade ACEC of up to 170 acres to the National Cemetery, and up to 50 acres to the National Guard, subsequent development would change the acreage and boundary of the ACEC.	Fort Meade ACEC acreage and boundaries would not be changed.	Upon land transfer, the boundaries of the ACEC would be changed to match the retained BLM portion.
Impacts from Transportation Facilities and Access	Motorized travel limited to designated roads.			
Special Designations				
Areas of Critical Environmental Concern				
Impacts from continued Fossil Cycad ACEC designation	Boundaries and protection would remain the same under all Alternatives.			
Impacts from continued Fort Meade ACEC	Upon land transfer, the boundaries of the ACEC would be changed to match the retained BLM portion. The size of the ACEC could be reduced by up to 220 acres or less than 1%.		No land transfers to other agencies would occur and the boundaries of the ACEC would remain the same.	Same impacts as Alternatives A and B.
Impacts from Scenic Byway -Back Country Byway	Back Country Byway designation and management is proposed to be continued on the BLM road in the Fort Meade ACEC. Maintenance, repair, and safety projects would be completed as needed and funded.			
Impacts from Greater Sage-Grouse PPAs ACEC	No ACEC. Beneficial impact through management	No ACEC. Beneficial impact through management	An ACEC designation would not provide additional	No ACEC. Beneficial impact through management

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	flexibility and continuity of management on a landscape scale.	flexibility and continuity of management on a landscape scale.	protection in the Greater Sage-Grouse PPAs as the level of activity associated with mining and oil and gas leasing would not change as a result of ACEC designation because most high potential, locatable mineral ownership in the PPAs is already claimed, and most high potential oil and gas potential areas are held by production. In addition, the NSO protection provided by Alternatives B and D already limits oil and gas development in lower potential areas. An ACEC designation would not provide any additional, meaningful, practical protection to sage-grouse and other resources as protective measures including restrictions or withdrawal/closures are already provided for within the PPAs by Alternatives B, C and D. Intensive signing of BLM parcels within the ACEC would be needed to manage and identify BLM-administered lands in the	flexibility and continuity of management on a landscape scale.

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
			PPAs ACEC as a separate management unit. ACEC management would also be difficult to implement as numerous holdings of private and state lands are intermingled with BLM-administered lands within the ACEC (Map 2-5).	
Impacts to Facilities FROM other resources, uses, special designations for each alternative				
Physical, Biological & Cultural Resources				
Impacts from Paleontological Resources management actions	Maintenance of existing facilities would be impacted if resources were found	Location of future developments or projects would have to be moved if resource were found	Same as B.	
Impacts from Visual Resources management actions	No Change	No Change	Location, type and design of future developments would be effected by VRM	Facilities proposed for areas with more restrictive VRM objectives would be designed and sited to retain scenic qualities, which may create additional costs associated with planning and construction of the facilities, and may prohibit development of some facilities that cannot be mitigated to achieve standards.
Impacts from Lands with Wilderness Characteristics	None Present.			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Resource Uses				
Impacts from Livestock Grazing management actions	No effect.	New facilities would have a negligible effect on the grazing program since they would still be in existing enclosures.	Same as A.	Same as B.
Impacts from Recreation/Visitor Services management actions	No change.	Additional Facilities and improved roads.	Same as A.	Present facilities would be maintained or upgraded and additional facilities could be authorized on the project level if needed.
Impacts from Travel Management actions	No change.	More designated trails and small parking areas or pull-outs.	Designated trails but less mileage as some unnecessary or redundant trails are closed.	Designed trails are planned in cooperation with local governments, users, and private parties. Some trails are rerouted to better locations and unnecessary trails are closed.
Impacts from Forest and Woodland Products management actions	No change.	Logging trails could become motorized or non-motorized trails if properly situated and necessary for travel management.	Trails are decommissioned after use	Same as B.
Impacts from Lands and Realty				
Impacts from Land Tenure management actions	No Change	New facilities such as buildings, roads, and dams may be obtained as the result of land exchanges. Any loss of existing facilities is not anticipated.	Same as B	Same as B
Special Designations				
Impacts from designation of Areas of Critical	Fort Meade ACEC No change anticipated to	Road improvements for public safety and more sites	Additional interpretive signage. Facilities would be	Same as B except additional camping would not be added

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
Environmental Concern	existing facilities. Unless they need to be replaced or repaired due to deterioration or damage.	with interpretive signage. Possible expansion of existing camping.	maintained in a safe, functional condition. Adequate signing of public lands within the Greater Sage-Grouse PPAs ACEC would be very difficult because of the intermingled land ownership pattern.	at the Alkali Creek sites until present capacity in reached. Fee camping could be developed at Fort Meade Reservoir if feasible.
Impacts to Social Conditions FROM other resources, uses, special designations for each alternative				
Resource Uses				
	Continuation of current management would enhance the quality of life of permittees, those who favor resource use and residents of local communities; Those who favor resource protection would not feel these resources would receive adequate protection.	This alternative would enhance the quality of life of permittees, those who favor resource use, OHV enthusiasts, and residents of local communities; Those who favor resource protection would not feel these resources would receive adequate protection.	This alternative would enhance the quality of life of those who favor resource protection and recreation that provides solitude. Permittees, those who favor resource use, OHV enthusiasts, and residents of local communities would not feel their concerns were adequately addressed and may experience a decline in quality of life.	This alternative could enhance the quality of life of those who favor resource protection and permittees, those who favor resource use, OHV enthusiasts, and residents of local communities because many of the needs of all these groups and individuals would be addressed.
Impacts to Environmental Justice FROM other resources, uses, special designations for each alternative				
Resource Uses				
Impacts of all Alternatives (common)	No disproportionate adverse impacts to minority or low income populations considered under environmental justice guidance would occur.			

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
Impacts to Economics FROM other resources, uses, special designations for each alternative				
Resource Uses				
Impacts from Agricultural and Livestock Use	BLM would continue to provide about 1% of the total livestock forage needs in the local economy where economic dependency of livestock producers on BLM forage would remain unchanged. About 440 operators would continue to have grazing leases. About 10% of the farms/ranches in the local economy would hold grazing permits. The amount of authorized use would remain unchanged; dependency on BLM forage would remain relatively unchanged; and BLM forage would continue to provide a critical element of some livestock producers' complement of grazing, forage, and hay production. An annual average of 62,270 AUMs of authorized livestock grazing would support approximately 50 total full and part-time jobs and $3.3 million in labor and proprietor's income. Annual federal revenues from livestock grazing fees would be about $148,000 annually, of which about $74,000 would be distributed to the counties. The difference between market prices for livestock grazing and fees charged by the BLM would continue to represent annual consumer surplus to the BLM grazing operators of an estimated $1.3 million.			
Impacts from Minerals Development (common) management actions	Under all alternatives, mineral development (mostly oil and gas) would continue to be the land/mineral use that has the most influence on the local economy. It would contribute more employment, income, and public revenue than any other major category of BLM activity. Most of the oil and gas activity and production would continue to occur in Harding County. Federal minerals leased for oil/gas exploration, development, and production would increase from 101,700 acres to about 267,600 acres when areas deferred from leasing would be available after the RMP revision. Estimated annual leasing and rental revenues would increase from $154,000 to $404,000. An estimated 19,380 short tons of bentonite and 12,610 lbs. of uranium would be produced annually.			
Impacts from Minerals Development management actions	Federal mineral production would increase from current levels. Average annual production of 280,514 MCF of natural gas, 239,856 bbl of oil, 19,380 short tons of bentonite, and 12,610 lbs. of uranium would support about 240 local jobs and $8.2 million in wage and proprietors' income. Total annual federal revenues from leases, rents, production	Federal oil/gas production would increase more than any other alternative. Annual production of 223,814 MCF of natural gas, 191,374 bbl of oil, 19,380 short tons of bentonite, and 12,610 lbs. of uranium would support about 200 local jobs and $6.9 million in wage and proprietors' income. Total annual federal revenues from leases, rents, production	Federal oil/gas production would increase by less than Alternatives A, B and C. Annual production of 157,088 MCF of natural gas, 134,319 bbl of oil, 19,380 short tons of bentonite, and 12,610 lbs. of uranium would support about 134 local jobs and $4.6 million in wage and proprietors' income. Total annual federal revenues from leases, rents, production	Federal oil/gas production would be the same as Alternative B. Annual production of 223,814 MCF of natural gas, 191,374 bbl of oil, 19,380 short tons of bentonite, and 12,610 lbs. of uranium would support about 200 local jobs and $6.9 million in wage and proprietors' income. Total annual federal revenues from leases, rents, production

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	royalties, and sales would be about $3.4 million; of which about $1.6 million would be distributed to the counties of production.	royalties, and sales would be about $2.8 million; of which about $1.4 million would be distributed to the counties of production.	royalties, and sales would be about $1.9 million; of which about $896,000 would be distributed to the counties of production.	royalties, and sales would be about $2.8 million; of which about $1.4 million would be distributed to the counties of production.
Impacts from Recreation (common) management actions	An annual average of 186,900 recreation visits would support about 120 full and part time jobs and $3.2 million in labor income. The willingness to pay for recreation opportunities would represent an estimated annual consumer surplus of $11.0 million to the recreation visitors. Annual revenues from recreation use permits, campground receipts, and outfitter/guide receipts would be about $3,000. None of these revenues would be distributed to the local counties.			
Impacts from Forests and Woodlands management actions	Average annual timber harvest of about 1,930 CCF of sawtimber would support an estimated 13 jobs and about $530,000 in wage and proprietors' income. This activity would also generate about $80,000 in federal revenues and < $5,000 in state/local revenues.	Average annual timber harvest of about 1,790 CCF of sawtimber would support an estimated 13 jobs and about $500,000 in wage and proprietors' income. This activity would also generate about $80,000 in federal revenues and < $5,000 in state/local revenues.	Average annual timber harvest of about 1,680 CCF of sawtimber would support an estimated 12 jobs and about $470,000 in wage and proprietors' income. This activity would also generate about $70,000 in federal revenues and < $5,000 in state/local revenues.	(Same as Alternative B) Average annual timber harvest of about 1,790 CCF of sawtimber would support an estimated 13 jobs and about $500,000 in wage and proprietors' income. This activity would also generate about $80,000 in federal revenues and < $5,000 in state/local revenues.
Impacts from Lands and Realty (Common) management actions	Existing use authorizations (e.g. rights-of-way, permits, and lease rentals) would continue to generate an estimated annual average $2,000 of revenue to the federal government. Payments in Lieu of Taxes (PILT) from the federal government to 23 counties would continue to be approximately $570,000 with all alternatives. The development of renewable wind energy on public lands would stimulate economic activity from the construction and operation of the towers and related infrastructure. Rights-of-way payments would increase from current levels.			
Impacts from Lands and Realty (Wind Energy) management actions	More wind energy development would be anticipated with Alternative A than with the other alternatives. A total of 198 towers (capacity of 693 MW) on BLM lands would support up to 3,280 local jobs and an estimated $126.5 million in	A total of 88 towers (capacity of 308 MW) on BLM lands would support up to 1,459 local jobs and an estimated $56.2 million in labor income during construction. After construction, average annual operation and maintenance would contribute about 50	A total of 73 towers (capacity of 256 MW) on BLM lands would support up to 1,210 local jobs and an estimated $46.7 million in labor income during construction. After construction, average annual operation and maintenance would contribute about 40	A total of 121 towers (capacity of 424 MW) on BLM lands would support up to 2,010 local jobs and an estimated $77.7 million in labor income during construction. After construction, average annual operation and maintenance

Table 2-3
Summary Comparison of Impacts

	Alternative A (No Action)	*Alternative B*	*Alternative C*	*Alternative D (Preferred Alternative)*
	labor income during construction. After construction, average annual operation and maintenance would contribute about 120 jobs and $4.5 million in wage and proprietors' income. It would generate about $2.88 million in annual federal rights-of-way rent revenues.	jobs and $2.0 million in wage and proprietors' income. It would generate about $1.28 million in annual federal rights-of-way rent revenues.	jobs and $1.7 million in wage and proprietors' income. It would generate about $1.06 million in annual federal rights-of-way rent revenues.	would contribute about 70 jobs and $2.7 million in wage and proprietors' income. It would generate about $1.76 million in annual federal rights-of-way rent revenues.
Government	Average annual BLM labor and non-labor expenditures ($2.9 million) would support an estimated 50 full and part time jobs and about $3.0 million in wage and proprietor's income. The influence of BLM labor and operations contributions would be most apparent in Belle Fourche (Butte County) where the BLM office is located. Employment and income effects of mechanical treatments, prescribed burning, invasive species treatments, and timber management (fuels treatments) would be included in government operations. Treating hazardous fuels would tend to reduce the threat to life and property nearby.			
Combined Effects	The combined effect of Alternative A would contribute an average annual 620 local full and part-time jobs and $24.1 million in wage and proprietors' income. This would be less than 1% of current local employment and income. Annual program revenues to the federal government would be about $6.5 million; payments to counties would be about $2.3 million, most of which would be related to oil and gas production and PILT payments. Employment would increase by about 190 jobs; income	The combined effect of Alternative B would contribute an average annual 510 local full and part-time jobs and $20.2 million in wage and proprietors' income. This would be less than 1% of current local employment and income. Annual program revenues to the federal government would be about $4.3 million; payments to counties would be about $2.0 million, most of which would be related to oil and gas production and PILT payments. Employment would increase by about 80 jobs; income	The combined effect of Alternative C would contribute an average annual 434 local full and part-time jobs and $1.7 million in wage and proprietors' income. This would be less than 1% of current local employment and income. Annual program revenues to the federal government would be about $3.6 million; payments to counties would be about $1.3 million, most of which would be related to oil and gas production and PILT payments. Employment would increase by about 54 jobs; income would increase	The combined effect of Alternative D would contribute an average annual 530 local full and part-time jobs and $20.9 million in wage and proprietor's income. This would be less than 1% of current local employment and income. Annual program revenues to the federal government would be about $4.8 million; payments to counties would be about $2.0 million, most of which would be related to oil and gas production and PILT payments. Employment would increase by about 100 jobs; income

Table 2-3 Summary Comparison of Impacts				
	Alternative A (No Action)	***Alternative B***	***Alternative C***	***Alternative D (Preferred Alternative)***
	would increase by about $7.4 million; federal revenues would increase by about $3.9 million; and local revenues would increase by about $500,000 compared to current average annual levels. The local population would increase by an estimated 290 people and the number of households would increase by an estimated 120.	would increase by about $3.4 million; federal revenues would increase by about $1.7 million; and local revenues would increase by about $210,000 compared to current average annual levels. The local population would increase by an estimated 120 people and the number of households would increase by an estimated 50.	by about $2.3 million; federal revenues would increase by about $1.2 million; and local revenues would increase by about $155,400 compared to current average annual levels. The local population would increase by an estimated 89 people and the number of households would increase by an estimated 36.	would increase by about $4.2 million; federal revenues would increase by about $2.2 million; and local revenues would increase by about $210,000 compared to current average annual levels. The local population would increase by an estimated 150 people and the number of households would increase by an estimated 60.
Other Combined Effects	BLM management that would generate the most employment and income would be mineral development (mostly oil and gas development). The employment, income, and revenue effects of BLM resource management would be spread unequally among the counties and communities within the planning area and the 10 counties that make up the local economy. Most of BLM land and minerals base and land/mineral uses are in Butte, Harding, and Meade counties. Much of the economic impacts would also occur in those counties. The influence of resource management on BLM-administered lands would not change local economic diversity (as indicated by the number of economic sectors), dependency (i.e. where one or a few industries dominate the economy), or stability (as indicated by seasonal unemployment, sporadic population changes, and fluctuating income rates). The population density and average income per household would continue to be about the same as current levels.			
Impacts from Soil and Water management actions	Economic benefits from soil and water management and costs (from lost agricultural production, additional costs for municipal water treatments, shortened life of dams and reservoirs, additional cost of water for industrial purposes, reduced water recreation use, reduced soil productivity, and water pollution) associated with resource use are unknown.			
Cumulative Effects	The demographic and economic trends that are described in Chapter 3 to provide context for impacts would be expected to continue. The description of the Affected Environment found in Chapter 3 summarizes the past and present activities that influenced cumulative economic conditions. The economic impacts summarized above for each alternative would be combined with those demographic and economic trends to provide an idea of the cumulative economic effects. In addition, construction of wind energy developments with towers on BLM lands would be anticipated.			